SOUTHWESTERN MEDICINE

VOLUME IX SEPTEMBER, 1925 No. 9

OFFICIAL ORGAN
OF THE
NEW MEXICO MEDICAL SOCIETY
ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
THE MEDICAL AND SURGICAL ASSOCIATION
OF THE SOUTHWEST

FOR TABLE OF CONTENTS—SEE ADVERTISING SECTION PAGE 1

GASTRON

An aqueous-acid-glycerin extract of the entire mucosa of the fresh stomach, including the pyloric, containing the peptic enzymes—proteolytic and milk-curdling, the activated principles and naturally associated soluble organic and inorganic constituents.

GASTRON is a stable, potent fluid, free from alcohol and free from sugar, with an acidity approximately of 0.25% absolute hydrochloric acid, loosely bound to protein, and twenty-five per cent pure glycerin.

GASTRON is put up in 6 oz. unlettered bottles, without literature.

FAIRCHILD BROS. & FOSTER
NEW YORK

Insulin Squibb

is now available in 5-Cc. and 10Cc. vials, in 4 strengths:

5-Cc.	10-Cc.
50	100 units (10 units per Cc.) — *Blue label*
100	200 units (20 units per Cc.) — *Yellow label*
200	400 units (40 units per Cc.) — *Red label*
	800 units (80 units per Cc.) — *Green label*

INSULIN is the active anti-diabetic principle of the pancreas. Insulin is the one and only anti-diabetic specific.

All Insulin manufactured in the United States is prepared under the license and control of the University of Toronto.

INSULIN SQUIBB is the name given to the Insulin manufactured by E. R. SQUIBB & SONS.

INSULIN SQUIBB, in common with other brands of Insulin sold under whatever name in the United States, must conform to standards and requirements established by the Insulin Committee of the University of Toronto.

UNLESS OTHERWISE SPECIFIED, THE 5-Cc. VIAL WILL ALWAYS BE SUPPLIED.

Complete Information Upon Request

E·R·SQUIBB & SONS, NEW YORK

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

Southwestern Medicine

PUBLISHED MONTHLY

VOLUME IX SEPTEMBER, 1925 No. 9

CONTENTS

CANCER—AND THE VALUE OF RADIATION IN MALIGNANCIES OF 335
J. W. Cathcart, M. D., El Paso, Texas

MUNICIPAL MILK CONTROL 340
James R. Scott, M. D., Ph. D., Albuquerque, N. M.

BLOOD MATCHING FOR TRANSFUSION 343
Lee Yater, M. D., Cleburne, Texas

CHRONIC APPENDICITIS 347
Henry Snure, M. D., Los Angeles, Calif.

TACK IN LUNG REMOVED BY BRONCHOSCOPY 349
W. E. Vandevere, M. D., El Paso, Texas

PEMPHIGUS VEGETANS: REPORT OF CASE 350
A. M. Washburn, M. D., Gamerco, N. M.

CONGENITAL VALVE FORMATION IN THE POSTERIOR URETHRA 352
W. G. Schultz, M. D., Tucson, Arizona

THE THERAPEUTIC ACTION OF ANILINE DYES—INFECTIOUS DISEASES 355
Paul Gallagher, M. D., El Paso, Texas

DRAINING ABDOMINAL WOUNDS 359
Rafael A. Hernandez, M. D., Tucson, Arizona

EDITORIAL

THE SOUTHWEST MEETING DATES 361
PUBLIC HEALTH IN NEW MEXICO 362
TULANE UNIVERSITY POSTGRADUATE SCHOOL 363
COCHISE COUNTY MEDICAL SOCIETY 363
MASONIC HOSPITAL, EL PASO 365
CHAVES COUNTY, N. M., MEDICAL SOCIETY 366
YUMA COUNTY MEDICAL SOCIETY 368
PERSONAL NOTES 368
BOOK REVIEWS 369

Radium and Oncologic Institute

1052 West Sixth Street ∴ Los Angeles

RADIUM THERAPY

An adequate quantity of radium and complete emanation apparatus affords the facilities essential for modern technique in radium therapy.

DEEP X-RAY THERAPY

Two complete 300.00-volt installations providing every facility for preliminary and post-operative Radiation and X-ray Therapy alone or in combination with other treatment.

X-RAY DIAGNOSTIC LABORATORIES

Completely equipped offer the profession every assistance for roentgenology as an aid in diagnosis.

HOSPITAL AFFILIATIONS

Including a complete high voltage X-ray and Radium Therapy department in the Methodist Hospital amply provide for cases requiring hospitalization.

LABORATORIES

Affiliated for clinical and pathological study and complete facilities for Actinic Ray Therapy.

"This institution possesses unexcelled facilities for radium and radium emanation therapy and high voltage x-ray therapy. With modern x-ray diagnostic, clinical and pathological laboratories, complete equipment for electric coagulation cautery and allied surgery, it offers the medical profession unexcelled facilities for the diagnosis and treatment of neoplastic diseases."

We desire to confer and cooperate with the Medical Profession in the treatment of cancer and other appropriate diseases and request inquiries either in person or by correspondence.

J. W. WARREN, M. D., Roentgenologist *E. D. WARD, M. D.*

REX DUNCAN, M. D., Medical Director

Specialists in the Southwest

EL PASO, TEXAS

E. A. DUNCAN, M. D.
Practice Limited to
INTERNAL MEDICINE
610 Martin Bldg. *El Paso*

FRANKLIN D. GARRETT, M. D.
Practice Limited to
DISEASES OF THE STOMACH AND INTESTINES AND RELATED INTERNAL MEDICINE
Two Republics Life Bldg. *El Paso*

G. WERLEY, M. D.
DISEASES OF THE HEART
401-2 Roberts-Banner Bldg. *El Paso*

F. P. MILLER, M. D.
GENERAL MEDICINE AND SURGERY
Suite 514 Martin Bldg. *El Paso*

S. G. VON ALMEN, M. D.
Practice Limited to
DISEASES OF THE EYE, EAR, NOSE AND THROAT
414 Mills Bldg. *El Paso*

PAUL ELY M'CHESNEY, M. D.
NEUROLOGY AND PSYCHIATRY
524 Mills Bldg. *El Paso*

JOHN W. CATHCART, M. D.
and
C. H. MASON, M. D.
Practice Limited to
X-RAY AND RADIUM
311 Roberts-Banner Bldg. *El Paso*

J. A. RAWLINGS, M. D.
and
HARRY LEIGH, M. D.
Practice Limited to
DISEASES OF CHILDREN AND OBSTETRICS
404 Roberts-Banner Bldg. *El Paso*

K. D. LYNCH, M. D.
GENITO-URINARY SURGERY
414 Mills Bldg. *El Paso*

W. R. JAMIESON, M. D.
GENITO-URINARY, SKIN AND RECTAL DISEASES
921 First National Bank Bldg. *El Paso*

W. L. BROWN, M. D. C. P. BROWN, M. D.
BROWN AND BROWN
Suite 404 Roberts-Banner Bldg. *El Paso*

H. P. DEADY, M. D.
Special Attention to
SURGERY AND GYNECOLOGY
First National Bank Bldg. *El Paso*

E. B. ROGERS, M. D.
Special Attention to
SURGERY
606-616 Martin Bldg. *El Paso*

L. G. WITHERSPOON, M. D.
PLASTIC SURGERY
314 Roberts Banner Bldg. *El Paso*

JAMES VANCE, M. D.
Practice Limited to
SURGERY
313-4 Mills Bldg. *El Paso*
HOURS: 11 TO 12:30

W. E. VANDEVERE, M. D.
EYE, EAR, NOSE, AND THROAT
BRONCHOSCOPY AND ESOPHAGOSCOPY
218 Mills Bldg. *El Paso*

RATON, NEW MEXICO

M. F. SMITH, M. D.
SPECIAL ATTENTION TO DIAGNOSIS OF INTERNAL DISEASES AND SURGERY
X-RAY EQUIPPED WITH BUCKY DIAPHRAGM
Roth Block *Raton, New Mexico*

LOS ANGELES, CAL.

MARY LAWSON NEFF, M. D.
FUNCTIONAL AND ORGANIC NERVOUS DISEASES
DEVELOPMENT PROBLEMS OF CHILDHOOD
PSYCHOMETRIC TESTS PSYCHIATRY
Trinity Hotel *Los Angeles*

MADISON J. KEENEY, M. D.
GENERAL MEDICINE AND TUBERCULOSIS (PNEUMOTHORAX)
834 Pacific Mutual Bldg.
523 West Sixth St. *Los Angeles*

H. A. ROSENKRANZ, M. D.
UROLOGICAL SURGERY
DERMATOLOGY
ACTINO-THERAPY RADIUM
1024 Story Bldg. *Los Angeles*

MOSES SCHOLTZ, M. D.
Practice Limited to
DISEASES OF THE SKIN
718 Brockman Bldg. *Los Angeles*

TUCSON, ARIZONA

M. C. COMER, M. D., F. A. C. S.
EYE, EAR, NOSE AND THROAT
BRONCHOSCOPY AND ESOPHAGOSCOPY
Thomas Davis Clinic *Tucson, Arizona*

PHOENIX, ARIZONA

FRED G. HOLMES, M. D.
VICTOR RANDOLPH, M. D.
Practice Limited to
DISEASES OF THE CHEST
407 Goodrich Bldg. *Phoenix*

H. T. BAILEY, M. D.
Practice Limited to
EYE, EAR, NOSE AND THROAT
323 Ellis Bldg. *Phoenix*

ORVILLE H. BROWN, M. D.
INTERNAL MEDICINE
SPECIAL ATTENTION TO ASTHMA
503 Goodrich Bldg. *Phoenix*

T. T. CLOHESSY, M. D.
Practice Limited to
DISEASES OF THE SKIN
224-5 Luhrs Bldg. *Phoenix*

EDGAR H. BROWN, M. .D
Practice Limited to
ORTHOPEDIC SURGERY
614 Goodrich Bldg. *Phoenix*

I. L. GARRISON, M. D.
DISEASES OF WOMEN
INTRAVENOUS CHEMOTHERAPY
205-6-7 Goodrich Bldg. *Phoenix*

H. M. PURCELL, M. D.
Practice Limited to
UROLOGY
INCLUDING THE VENEREAL DISEASES
204 *Luhrs Bldg.* *Phoenix*

CHAS. S. VIVIAN, M. D.
UROLOGY
306 *Goodrich Bldg.* *Phoenix*

THE EL PASO PASTEUR INSTITUTE

12th Floor First National Bank Bldg.

□ □ □

An institution for the preventive treatment of rabies. Conducted upon strictly ethical principles and the technique as outlined by Pasteur rigidly adhered to.

No patient treated here has ever developed the disease.

Treatment lasts twenty-one days.

□ □ □

HUGH S. WHITE, M. D.
FRED C. LAMB, Analytical Chemist

Waite's Laboratory

Serology
Pathology
Bacteriology
Blood Chemistry.
Clinical Microscopy
Autogenous Vaccines
Therapeutic Dyes
Neosalvarsans
Sulpharsphenamine
Tryparsamide
Bismosol
Information.

PIONEER LABORATORY OF THE SOUTHWEST

Mailing Address, Box 63

EL PASO TEXAS

The Homan Sanatarium

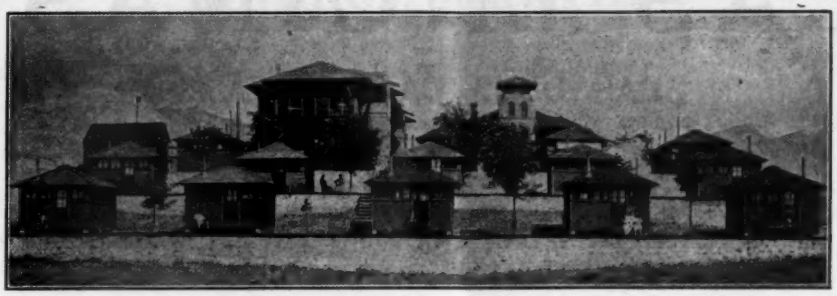
For the Treatment of Tuberculosis

EL PASO, TEXAS

Descriptive Booklet on Request

Telephone 1616

ALBUQUERQUE SANATORIUM



Located in the heart of the great Southwest—the Land of Sunshine. Average annual rainfall less than 7 inches. Altitude moderate. On the main line of the Santa Fe.

The open-air hygienic treatment of Tuberculosis is supplemented by artificial Pneumothorax and X-ray Therapy under the direction of a staff of 5 physicians trained in Internal Medicine. Special Facilities for Sun Baths.

Private porches baths, bungalows and modern, fire-proof buildings.

On request, information will be given concerning accommodations available.

W. A. GEKLER, M. D., Medical Director

A. L. Hart, M. D. **H. P. Rankin, M. D.** **B. J. Weigel, M. D.**

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter

(Patented)

Trade Mark Reg.

Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Obesity, Pregnancy, Relaxed Sacroiliac Articulations, High and Low Operations, Floating Kidneys, Etc.

Ask for 36-page Illustrated Folder

Mail orders filled at Philadelphia only—within 24 hours

Katherine L. Storm, M. D.

Originator, Patentee, Owner and Maker

1701 Diamond Street PHILADELPHIA

Providence Hospital

A General Hospital

□ □ □

Young ladies wanted for Training School. For information address

Superintendent,
Providence Hospital
El Paso, Texas

LAS ENCINAS

PASADENA, CALIFORNIA

A Sanatorium for the Treatment of General and Nervous Diseases

LAS ENCINAS

Climate ideal, cuisine excellent, outdoor recreation.

Located in the foothills of Sierra Madre mountains, surrounded by a 20-acre grove of live oaks. Central building and private cottages with modern conveniences. Hydrotherapy, Electrotherapy, Baths and Massage. Physicians and nurses in constant attendance.

□ □ □

BOARD OF DIRECTORS:

George Dock, M. D.; H. C. Brainerd, M. D.; W. Jarvis Barlow, M. D.; F. C. E. Mattison, M. D.; Stephen Smith, M. D.

□ □ □

Write for beautiful illustrated booklet.

STEPHEN SMITH, Medical Director
Las Encinas, Pasadena, Calif.

The Management of an Infant's Diet

Summer Diarrhea

Mellin's Food	**4 level tablespoonfuls**
Water (boiled, then cooled)	**16 fluidounces**

This formula provides a means of supplying the principal fuel utilized in the body for the production of heat and energy and furnishes immediately available nutrition well suited to protect the proteins of the body, to prevent rapid loss of weight, to resist the activity of putrefactive bacteria, and to favor a retention of fluids and salts in the body tissues.

While the condition of the baby will guide the physician in regard to the amount and intervals of feeding, the usual custom is to give one to three ounces every hour or two until the stools lessen in number and improve in character. The food mixture may then be gradually strengthened by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually employed in normal conditions.

Mellin's Food Co., 177 State Street Boston, Mass.

"ANNOUNCEMENT

Adding to our line of exclusive sales and service Agencies, we desire to announce, the Ideal Metal Furniture Company of Los Angeles, California, manufacturers of High Pressure Sterilizers for Hospital and Office use, also a full and modern line of Hospital Furniture. The Superintendent of this factory is Mr. Wm. Wiley who was for twenty-one years General Superintendent of the American Sterilizer Company, Erie, Pa. Mr. Leo Oakey is Assistant Superintendent and was formerly with the Scanlan Morris Company for several years.

This factory is turning out the best line of equipment that experienced Engineers and high quality materials can produce. We still aim to maintain service on any Sterilizers and Furniture formerly installed by us of other makes. From now on we are exclusive representatives for this "Ideal" Western factory.

Remember the slogans—"Westward Ho!" and "Home Products"

R. L. SCHERER CO.

Phone Trinity 9282 LOS ANGELES 736 South Flower St

E. H. McCLURE COMPANY

DALLAS, TEXAS

Surgical Instruments and Physicians' Supplies of Every Description
Sterilizers, Disinfectors, Beds, Ward Furniture and Hospital Equipment
of All Kinds

P. B. GRUBBS,
Western Representative

3513 Fort Boulevard,
El Paso, Texas

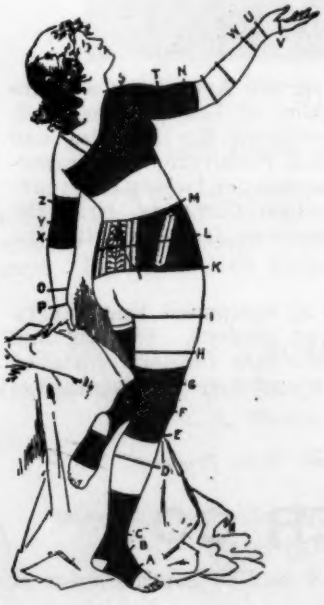
Calcreose

In Bronchitis and Tuberculosis

Calcreose is particularly suitable as an adjunct to other remedial measures. **Calcreose** contains 50% creosote in combination with calcium. **Calcreose** has all the pharmacologic activity of creosote but is free from untoward effects even when taken in large doses for long periods of time.

Sample 4 grain tablets supplied to physicians upon request.

THE MALTBIE CHEMICAL CO., NEWARK, N. J.



Elastic Hosiery

ABDOMINAL SUPPORTERS

made to order from fresh, live rubber, by competent workmen, giving you a perfect fit and fresh durable goods. Also Office Furniture and Dressings. An Up-to-Date Stock at right prices.

KENISTON-ROOT CORPORATION

418 W. Sixth St., Los Angeles, Cal.

ARLCO-POLLENS

were originated to make possible the scientific study of hay fever.

They made available **for the first time** a proper assortment of individualized diagnostic and treatment pollens—permitting thereby differential diagnoses, specific treatment and the development of authentic literature on

Hay Fever

The number and diversity of pollens have been constantly increased until they now cover the more essential requirements of the entire country.

But the constant seeking and studying of new pollens will continue in order to permit in future even finer distinctions of diagnosis and to assure still more accurate treatment.

List of Pollens with Literature on request.

THE ARLINGTON CHEMICAL COMPANY

Yonkers, New York

Southwestern Surgical Supply Company

320 Texas Street — El Paso, Texas

X-ray Apparatus and Supplies
Physio-Therapy Equipment
High Pressure Sterilizers
Hospital Furniture

Surgical Instruments
Rubber Gloves
Ligatures
Abdominal Belts, Trusses, Etc.

AGENTS FOR

Kelley-Koett Mfg. Co.
Engelin Electric Co.
H. G. Fischer & Co.
Hanovia Chemical & Mfg. Co.

W. D. Allison Co.
Wilmot Castle Co.
Bard Parker Company
Loeser's Products

**YOU ARE INTERESTED IN THE SOUTHWEST—
WHY NOT PATRONIZE HOME INDUSTRIES?**

STOVARSOL

(REG. U. S. PATENT OFFICE)

Acetylamino-oxyphenylarsonic Acid

Indicated in Amebic Dysentery

Accepted by Council of Pharmacy and Chemistry A. M. A.

Distributed in bottles of 25 tablets, each tablet 0.25 grams
May be obtained through your druggist

Literature furnished on request

MANUFACTURED BY

POWERS-WEIGHTMAN-ROSENGARTEN CO.

New York — PHILADELPHIA — St. Louis

Southwestern Medicine

OFFICIAL ORGAN OF
ARIZONA STATE MEDICAL ASSOCIATION
NEW MEXICO MEDICAL SOCIETY
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
THE MEDICAL AND SURGICAL ASSOCIATION
OF THE SOUTHWEST

VOLUME IX | SEPTEMBER, 1925 | No. 9

ANNUAL SUBSCRIPTION $2 | SINGLE COPIES 25 CENTS

Entered at the Postoffice at Phoenix, Arizona, as second class matter. "Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized March 1, 1921."

CANCER—AND THE VALUE OF RADIATION IN MALIGNANCIES OF THE BREAST AND UTERUS

J. W. CATHCART, M. D., EL PASO, TEXAS

Cancer has been termed "mankind's most sinister menace to health and happiness" and statistics show that the death rate has increased 36.5% from 1900 to 1921. Hoffman now estimates the deaths from cancer in the world at one-half million annually. In the United States, one out of every ten persons over forty years of age die of concer. England, Wales, Northern and Central Europe are also increasing in about the same proportion as the United States.

There seems to be no difference between the death rate of the white and colored races of this country, but the rate is decidedly higher in the Northern states, and notwithstanding the almost incredible improvement in human longevity and general health, there has been so marked an increase in the cancer death rate, that this now stands out as the greatest medical problem of the present day.

The etiology of cancer still remains unsolved. Extensive research of a highly scientific character, is being carried on by numerous experimentors along many different lines. The work of Dr. Maud Slye who has been breeding mice for twenty years, following Mendel's law of heredity, (and who has the records of more generations of mice than there are records of the human family since history began), has enabled her to produce strains that will die 100% of cancer, and also strains that will be 100% cancer free. It is interesting to note here that in 5,000 cases of spontaneous concer in mice, not one developed in the uterus. Miss Slye's idea is that by proper breeding of the human family for three generations, cancer could be eliminated.

Leitch believes it to be an irritant, and by means of hot coal tar applied to rabbits' ears, has been able to produce skin cancers.

Others believe it directly traceable to diet and manner of living, and cite as an example, that during the time in England when the consumption of butcher's meat was doubled, cancer increased four fold.

Hoffan, who has studied the mortality statistics from every angle, states that "cancer is distinctly a disease of civilized countries, and its increasing frequency is, in a large measure no doubt, the direct result of faulty habits and abnormalities of life, induced by the complex conditions of the modern environments, favored chiefly by food abundance, nervous strain and the numerous by-products of material prosperity."

Again, others of equal prominence have attributed cancer to embryological rests, endocrine disturbances, traumatisn, thermic, actinic and chemical agents, excessive carbohydrates, parasites, and, last but not least, even dear old aspirin has been accused.

The old fashioned corset so long in vogue among women of civilized countries may have contributed to cancer of the breast, since this disease is practically unknown among Japanese women, nor has an authentic case ever been observed among pure native Indian women in either North or South America, where the corset is unknown.

With this introduction, we now come to one of the principle purposes of this paper, which is to emphasize the value of radiation in the treatment of breast and uterine malignancies. In the light of our present knowledge, it would seem that this agent should and will assume a vastly more important role than it has heretofore been accorded. No less an authority than John G. Clark, of Philadelphia, recently made the

Read before the New Mexico Medical Society, at its Forty-third Annual Meeting, at Clovis, New Mexico, May 19 to 21, 1925.

statement that "to discard or fail to use radiation as an adjunct to surgical measures, in the face of the available statistics, should lay the operator open to a charge of criminal negligence."

EXAMINATION

Examination of a patient with symptoms referable to the breast consists, first, of a carefully taken history and general physical examination, with laboratory tests. In examining the breast, the patient is stripped to the waist, placed in a supine position on a table with the hands above the head. Then, standing at the head of the table, a careful inspection is made for any evidence of tumor. Frequently a tumor will be noted which is not visible with the patient in any other position. Retraction of the nipple, dimpling of the skin, and changes in color are noted. Bloodgood states that "in this position he has never observed a small benign tumor to bulge, and up to the present time, all such tumors visible on inspection have been malignant, and the bulging has been the only sign differentiating them from the benign."

Palpation, which is the principal diagnostic measure, must be carefully, systematically and skilfully done, since great care is necessary to differentiate between a possible tumor, and a lumpy breast which may be due to increased consistency from congestion. This latter condition is not permanent and should gradually disappear under careful handling of the patient, if allowed sufficient time for the examination.

In the diagnosis of cancer of the uterus, the history is of the utmost importance. Any unusual discharge or irregularity in the menses, or discharge between periods, in a woman past thirty years of age, is to be regarded as suspicious, and should be carefully investigated, especially "spotting". After the establishment of the menopause, "spotting" is almost pathognomonic of carcinoma. Profuse flooding near the menopause, at regular intervals, which occur more frequently than formerly, but in which there is no dribbling in the interval, is more likely to be caused by a fibroid condition than by malignancy, and is quickly relieved by the application of radium to the uterine canal, or deep x-ray externally, or a combination of both. It is not improbable that prompt relief of this condition by this method will often prevent carcinoma.

It is quite true that many of the irregularities of the menopause are not due to malignancies, yet statistics show that one out of every eight women who reach the age of forty, die of cancer, the uterus ranking first in location. A thorough examination should therefore be insisted upon in every case presenting symptoms that may be regarded as suspicious. If an ulcer or irritated granulation is found in or on the cervix that bleeds freely to manipulation, and of which the diagnosis is uncertain, a carefully selected section should be at once removed for pathological examination, although in a well developed case of carcinoma of the cervix, the removal of a section for microscopical purposes is contraindicated, as there is an increased danger of spreading the disease, whenever lymph and blood-vessels are severed.

It is a lamentable fact that far too many cases reach an advanced stage where, although medical treatment has been rendered, there has been no physical examination. The failure of women to seek proper medical advice is, no doubt, due to a lack of education. When we stop to think that during the past twenty years, through a campaign of education, the mortality from tuberculosis has been reduced 30%, while that from cancer has increased more than 30% and more people in the United States today are dying from cancer than from tuberculosis, we realize that the public must be aroused to the seriousness of this situation, and that it remains with the medical profession to educate the laity properly, if we are to bring cancer cases, especially those of the breast and uterus, under treatment during the early stages of the disease, when the largest number of permanent cures may be effected.

Having excluded the possibility of a benign tumor, and made a diagnosis of breast malignancy, it becomes necessary to determine the character and extent of the lesion in order to apply the type of treatment which offers the most permanent result.

If the tumor is confined to the breast, is freely movable on the chest and shows only metastasis to the axillary nodes on the affected side, it should be considered a primary operable case, and a thorough course of radiation should be given, followed in three to four weeks by surgical removal of the breast and axillary glands, which, in turn, should be followed in from two to three weeks by another course of radiation, thus obtaining the best possible result.

In a large series of primary operable tumors, followed over a period of three and four years after operation, it has been shown that where surgery alone was used, 20% are still living; where post-operative radiation was used, 30% are still living, and where pre and post-operative radiation were used, 45% are still living. In view of these statistics, the surgeon who has the welfare of his patient at heart cannot do other than

instist upon pre and post-operative radiation in every case of breast carcinoma.

If, however, upon examination the case falls under one of the following headings, as outlined by Dr. Burton J. Lee of the Memorial Hospital, New York, it is to be considered inoperable.

A. Fixation of the breast tumor itself to the chest wall.

B. Involvement of the supraclavicular nodes (the first one usually palpable being that directly behind the inner end of the clavicle).

C. Definite involvement of the opposite axillary nodes.

D. Diffuse subcutaneous nodules.

E. Diffuse inflammatory carcinoma involving a considerable skin area.

F. Chest metastasis, pleural or mediastinal.

G. More remote metastasis.

Surgical removal of a primary tumor that has metastasized is frequently followed by a rapid growth of the metastasis, while, on the other hand, radiation of an inoperable tumor seems to produce something needed in the system by nature to overcome the aberrant growth and often times not only the primary growth is inhibited, but also the matastases are retarded in their development.

While this paper is not intended to be of a technical nature, but is more of a plea for pre and post-operative radiation in all operable breast carcinomas, and radiation alone in inoperable cases, it may not be amiss to describe the technic employed:

180 K. V. at 50 c.m. distance, 5 ma., for one hour, filtered through ½ mm. of copper and 1 mm. of aluminum, administered to each of four ports, axilla, lateral chest, supraclavicular area and anteriorly over the breast.

In some instances, however, we use 140 K. V. with 4 mm. of aluminum, 38 c.m. skin distance, 5 M. A. for 18 minutes each port.

All patients undergoing radiation are kept on a basic alkaline diet.

CARCINOMA OF THE FUNDUS

A gradual increasing persistent pussy discharge, with prolongation of the menses in a woman of cancer age, whose history is negative, with no suggestion of retained products of conception, should be regarded as suspicious of carcinoma of the fundus.

The carcinomas of the fundus, which constitute about 3% of the carcinomas of the uterus, because of their high resistance to radiation and tendency to late metastasis, should, if the patient is surgically fit, be subjected to hysterectomy. If the discharge of pus is too profuse, radium or aniline dyes should be used as a preliminary to hysterectomy. For cancers of the cervix, which constitute 97% of the malignancies of the uterus, radium and deep x-ray are to be used without surgery or cautery.

If we review the evidence collected by Robert B. Greenough, who heads the Committee appointed by the American College of Surgeons on the Treatment of Malignant Diseases with Radium and X-ray, we will find that the Committee after analyzing the records from a large number of clinics in Boston, Chicago, New York, Philadelphia, Toronto, Baltimore, Cleveland and Scranton, reported that in:

Early or borderline cases, radiation had 33 1-3% living at the end of the five year period, with a primary mortality of 1.6% and surgery had 25% living at the end of a five year period with a primary mortality of 20%.

There were no cures by cautery alone.

H. V. James Heyman, of Stockholm, using practically the same technic for ten years, had 39.1% of all patients treated still living and free from symptoms, after five years. Of the operable or border line cases, 58.3% living and free from symptoms after five years. Inoperable cases, 16.6% living and free from symptoms after five years.

It is possible to go on piling up statistics of a similar character from many institutions. It would seem, however, that the foregoing are from such an authoritative source that they should constitute the accepted procedure of today.

The technic of radiation and the type of equipment now in use have been very greatly improved over that in vogue at the time the records for the above statistics were being made, and it is but reasonable to expect that the cases being treated today, will show five years from now a much more favorable percentage in the column free from symptoms.

The technic we follow in treating carcinoma of the cervix is to have the bowel well emptied and after an antiseptic douche, to place the patient in the knee-chest posture, using a Sims speculum with a small light attached, and insert a 50 milligram tube of radium, in a silver capsule, into the cervical canal, or, if this is impossible, into the cancerous mass, packing the rectum and bladder well away from the radium by means of a vaginal gauze pack, leaving the radium in place for 15 hours. This technic is repeated every two or three days until from 3,000 to 6,000 milligram-hours of radium are administered. If possible, we work our way up into the uterine canal and radiate the broad ligaments through the body of the uterus; otherwise, large hard rubber capsules containing the radium are placed in position on

either side of the cervix and the broad ligaments are radiated in that way. In some of the cauliflower types, radium needles are inserted into the mass.

Following the administration of radium. Treatments of 200,000 volt x-ray are given through ½ mm. of copper and 1 mm. of aluminum, at a distance of 50 mm. The dose is determined after having measured the patient with calipers. 85% of an erythema dose is administered to all parts of the pelvis. As a general rule only the anterior and posterior ports are used.

CONCLUSION

1. To combat the increasing death rate from cancer, it has been definitely established that reliance must be placed more and more upon the use of radium and x-ray, surgery alone being inadequate to hold in check the increasing mortality.
2. The etiology of cancer remains unsolved and we are therefore unable to adopt specific preventive measures.
3. Early diagnosis is essential to successful treatment.
4. Primary operable carcinoma of the breast should receive a course of x-ray treatment from three to four weeks prior to removal surgically, and this should be followed by another course of x-ray treatment in two or three weeks.
5. Inoperable carcinoma of the breast should be given the benefit of x-ray and radium treatments, without any attempt to remove the primary lesion.
6. Carcinomas of the fundus are to be considered as surgical lesions.
7. Carcinomas of the cervix at any and all stages will give the best results when treated by radium and x-ray.

DISCUSSION

DR. A. R. HATCHER, Wellington, Kans., (Opening): It was a great surprise to me to be called upon to open the discussion of Dr. Cathcart's splendid paper, and I consider it quite a compliment to be asked to do so as I am not altogether a radiologist, but am a sort of combination radiologist and surgeon.

The doctor has covered the subject so well that there is scarcely anything left to discuss so far as I am concerned, as I heartily agree with the statements he has made in every respect.

In a discussion with Dr. Miller this morning, we talked over some surgical cases and spoke about the choice between surgery and radiation in carcinoma of the cervix. My experience from handling this type of case from both angles, has absolutely convinced me (and I think I could not make it any stronger than this) that if my wife was suffering from carcinoma of the cervix, the best surgeon in the world could not operate, even if it was an operable case and so classified. (We have classifications, the operable cases, borderline and inoperable cases). I say this because I know that the surgical results in the best of hands for carcinoma of the cervix are not satisfactory. I have seen Dr. Wertheim in his clinic operate many carcinomas of the cervix, and I have seen him clinically diagnose a case in a fairly young woman as what he termed a beginning carcinoma of the cervix and found it necessary to close the abdomen on account of the metastass already present, yet in what he termed "early carcinoma of the cervix."

The process of examination, as Dr. Cathcart has covered it, is very important, especially the history and getting the cancer located, or diagnosed early. There is no harm in treating a primary lesion, in fact that is when it should be treated, but an early diagnosis is most important.

The selection of the cases by men who are fair-minded and whether the case should receive only radium after operation, or whether it should receive pre and post-operative radiation, and the selection of those cases where radium only should be used, is very important.

DR. P. S. KAADT, Clovis, N. M.: It might be interesting in this connection to note that Dr. John W. Nuzum, of Chicago, for the past six years has done a great deal of experimenting and has isolated a micrococcus which he thinks is responsible for this disease. His work has received favorable comment from Dr. Mayo and Dr. A. J. Ochsner, of Chicago. Whether this will change the treatment or methods of treatment, remains to be seen.

DR. J. W. KINSINGER, Roswell: For a good many years the surgeons who operated cancer cases usually got the case in the latter stage of the disease. When I began practicing medicine, it was almost impossible, with the facilities we had, to diagnose cancer, especially cancer of the uterus, and in the cases we operated we did so to prolong life. It was not with the intention of making a cure, as we considered cancer of the uterus in those days a fatal disease, and the great surgeons with whom we came in contact, operated to prolong life over a certain period, which was usually not very long, and they considered if they prolonged life for one year, it was worthy of the effort. Now, with our laboratory facilities and other facilities we have to make early diagnosis, it is wonderful to see the marked improvement. When I look at the cases living after a certain period of time, especially cases of cancer of the uterus, which was not the case when I began practicing medicine several (I will not say how many) years ago, I feel that there has been a wonderful progress in the treatment of malignant disease since my entrance in the profession.

Dr. Cathcart is to be congratulated upon the splendid paper he has given us. I do not believe the general practitioner knows the results are so good. I knew they were beginning to be very much better in recent years since the combination of radiation and deep x-ray was begun. I believe the first paper I ever heard of any importance was read by a doctor from Kansas City. Since that time we have had many splendid papers, nearly as good as Dr. Cathcart's, and the result has been uniformly the same, and I think from year to year there will be more improvement in the treatment and cure and prolongation of life in cancer cases, from the fact that radium is getting cheaper. We have radium available at near points and at much less expense to the poor people than formerly. Then, too, the x-rays have been wonderfully improved, and there will probably be further improvements made in the years to come. Therefore we have a fair prospect of cure, or if not cure, at least very much prolonged life, and while it is deplorable that the mortality is so great in these cases, I hope to see the day come soon when the mortality from cancer will be very materially reduced, and I believe the younger members of this society will see cancer perhaps eliminated as the Chicago doctor has set forth. I hope that this will be the case.

DR. H. A. INGALLS, Roswell: I have nothing

to add to Dr. Cathcart's paper. He always gives us something worth while and this paper is no exception, but is on a par with the excellent papers we have had from him in the past.

My observation in cancer cases has been that the mortality is greater in fairly young women than in those who have passed middle life.

I recall two cases of carcinoma of the cervix handled almost twenty years ago who are still living. They were women who were up about the age of menopause, around forty to forty-five years. I noticed when I was engaged in that work that the younger women from thirty to thirty-five years of age had recurrences and died very rapidly.

When Dr. Cathcart closes this discussion, I would like to have him tell us something about this phase and whether they still have the same mortality among the young that we formerly had, or whether they are responding equally well, to treatment, as those who are older in life.

DR. G. S. LUCKETT, Santa Fe, N. M.: From a public health standpoint, we are particularly interested in cancer because it offers a challenge to the health officer due to its relative position in the mortality tables.

I think there is still some question as to whether there has been so great an increase in cancer mortality as would appear from the statistics. Some of the men who have been studying these statistics are rather inclined to think that part of it is due to better diagnosis, and after having handled death certificates for the past four or five years, I am inclined to think that we cannot yet rely upon what the death certificat states as the cause of death. Be that as it may, there is no question but that cancer is taking a leading position today as the cause of mortality.

Dr. Cathcart spoke of the suggestion that the probable causes of the increase would be found in our present day civilization. I believe we ought to be careful in alleging any such cases, as they are merely guesses at best, and as scientific men, I think we want to try to get away as far as possible from guesses. It seems rather unlikely in the light of investigations that have been made on cancer, that changes in our environment are even largely responsible for the increase. The point I want especially to make is this—even if only 60% of these cases of cancer can be relieved, provided they come in the operable stage, that points to the health officer one method of attack on mortality. We cannot attack it through any of our ordinary methods of control, as we can in diphtheria, scarlet fever, etc. Our only resort is in the education of the public, in giving them such facts as these, and the best method of carrying these facts to the public is through the local physicians and the medical societies. During the last two or three years the State Bureau of Health has been cooperating with National Committee for the Control of Cancer and we have received the loan of their cancer films and have offered the use and distribution of the films to the local societies. The response has been fair, but not as good as it ought to be. If we are thoroughly convinced as physicians that these statistics are true, and that we can help to save our patients, then let us join together in carrying the education to the public.

DR. J. W. CATHCART, El Paso, Tex., (Closing): I want to thank the gentlemen for the discussion:

Dr. Hatcher spoke of Dr. Wertheim and his operation for carcinoma of the cervix. So far as I have been able to learn, in no case where the glands have been shown to be carcinomatous, has the patient ever been saved by a Wertheim operation.

Dr. Kaadt spoke of a micrococcus discovered by Dr. Nuzum, of Chicago, which is thought to be responsible for cancer. It may be that this is the etiological factor—perhaps it is only the media in which the micrococcus develops. It reminds me, however, of a statement I heard at the recent meeting of the Texas State Association. One of the men made the remark that we doctors were getting to be about as bad as the chiropractors, in that they attribute everything to nerve pressure, whereas we attribute to focal infection. Now may it not be possible that the infection takes place on a field developed by faulty metabolism and that we are dealing primarily with faulty metabolism rather than pure infection?

I am afraid that Dr. Kinsinger is a little too hopeful as to the improvement and progress in combating cancer. Statistics show about a 2% annual increase.

As to the question as to whether the statistics are correct or not, I know that statistics are liable to be fallible. Visit a surgical clinic and you wll find numerous cures of the internist seeking relief. Visit the wards of the internist and you will find numerous surgical cures seeking relief. However, as cancer statistics are nearly all based on death reports it would seem that there should not be a great discrepancy. That the increased death rate is due to improved diagnostic ability seem improbable. While there is probably a marked improvement in he early diagnosis of cancer, as mentioned byDr. Kinsinger, I cannot but believe that the men of 20 years ago were as accurate as those of today in the cause of death due to cancer of the breast and uterus.

Dr. Ingalls asks in regard to young women. Cancer is primarily a disease of old age. The longer you can keep a person young, the less cancer you will have. When a young person develops cancer, it is, however, just the same as when a young person develops tuberculosis. There is a lack of resistance in the body and the growth progresses rapidly. Carcinoma in women under thirty years of age may be expected to run a more rapid course than in older women.

Dr. Luckett raises a question as to the reliability of the statistics—a point that will probably never reach perfection. An interesting angle of the mortality statistics is developed by Hagerman of Kentucky, who claims 50 % of cures of breast carcinoma; Lee of New York claims only 20%. When you come to study the mortality statistics of New York, as compared with Kentucky, you will find that in New York they are losing 160 patients out of every one hundred thousand, while the statistics of Kentucky show 55 deaths out of every one hundred thousand. Now take the patients in New York, where the death rate is three times greater than that in Kentucky. What is the cause of the difference? Do they die of recurrence, or do they develop cancers? I cannot help but believe that our statistics are reasonably corect. I know there sometimes may be a question as to whether or not a patient has died from cancer, but I do not think there are enough of these cases to affect our statistics, for when we take the various types of cancer, such as of the lip, cancer of the tongue, and other growths that are readily diagnosed, we find these have increased in about the same relative proportion as the cases that are hard to diagnose.

There is one point, however, to be mentioned in connection with this increase that might have some bearing on statistics and that is the longer life period in civilized nations, cancer being primarily a diseases of old age, and more people naturally reaching the cancer age.

MUNICIPAL MILK CONTROL

JAMES R. SCOTT, M. D., PH. D., ALBUQUERQUE,, NEW MEXICO

Control of the production and distribution of milk sold within a municipality is desirable for several reasons. In the first place, such control should result in the abolition of milk-borne disease, except possibly in isolated instances. In the second place, such control should guarantee to the consumer that he is receiving milk which contains a definite percentage of butter fat, is free from unnecessary dirt and foreign material, and does not contain an excessive number of bacteria. In the third place, such control places those engaged in producing and handling milk under such regulation by the health department of the municipality, that individuals known to be dangerous to the public health may be excluded from participation in this business. Finally, through the license system, municipal milk control contributes in a small measure toward the city financial budget.

Logically, the control of milk by a municipality takes its origin from an ordinance passed by the city commission or other governing body of the municipality. Such ordinance stipulates certain prerequisities before engaging in the dairy business. Most ordinances require an application to be filed by the dairyman before he engages in distributing milk. The purpose of this is twofold; first, to enable the health officer to know who is engaged in this business, thereby assisting him in inspecting, scoring and supervising the farms, stock, equipment and methods; secondly, it serves as a notification to the city clerk that such individual owes certain fees to the municipality.

Upon filing such an application, the farm, milk plant, or place of business should receive a thorough and adequate inspection either by the health officer or a sanitary inspector who has been trained in dairy work. The purpose of such inspection is to determine the sanitary conditions surrounding the herd, the presence of diseased cows in the herd, the adequacy of the milk handling equipment and, to some extent, a mental estimation of the reliability and character of the man who is at the head of the farm. While none of the various score cards used for scoring dairies have given any value, percentage or otherwise, to the character of the producer, it is particularly important to consider this point, especially with regard to persons about to start for the first time in the dairy business. As a result of this inspection, the health department recommends favorably or adversely to the city clerk, after which a license may be issued.

The ordinances should contain certain standards for the milk itself. A minimum percentage for butter fat should be established, as well as a standard for solids not fat. Such standards should also be designated for cream, ice cream, and skim milk. A provision should be made declaring it illegal to sell those products which do not meet the established standards. In order that there may arise no question regarding the legal right of the health department to publish the results of the examinations of milk and of the scoring of the plant and equipment, provision should be included in the ordinance for the publication of results.

An adequate milk ordinance should contain several sections prescribing the specifications for construction and maintenance of the dairy barn, milk house, and insuring that the surroundings of these structures shall be maintained in a sanitary condition. Thus it becomes necessary to designate distances from the milk house or barn at which toilets, hog pens, chicken coops and similar structures must be erected. Here provision should be made for the drainage of corrals in which the cattle may be confined prior to milking. Here also should be incorporated standards of purity of the water used on the farm, especially that used for washing the milk utensils. Provision should be made for the removal of manure from the barn and the proper disposal of the same. The utensils which are required for the proper production of milk should be enumerated, such as the small-top milking pail, milk cooler, sterilizers for utensils and similar equipment.

The next important point to be covered by a dairy ordinance is the establishing of grades of milk, which can be produced and sold under such ordinance. When we come to examine the practise of various municipalities, we find considerable confusion in this respect. Some cities have established grades, which are designated by letters from the alphabet, as grade A, B, or C. These may be further subdivided, into grade A raw and grade A pasteurized. Other cities have been content with dividing milk into two classes, raw and pasteurized. In Albuquerque, we have provided for the production of certified, guaranteed, pasteurized and raw milk.

Read before the New Mexico Medical Society, at its Forty-third Annual Meeting, at Clovis, New Mexico, May 19 to 21, 1925.

The ordinance should consider and define each of the classes of milk provided. If it provides for certified milk, a simple section can be incorporated in the ordinance, stating that "Certified Milk shall comply in all respects with the current specifications for certified milk adopted by the American Association of Medical Milk Commissions". As you doubtless know, this requires the appointment of a certified milk commission by the local county medical society, regular physicial examinations of all employees, regular tuberculin testing of the herd, and numerous other specific and restrictive regulations. While the Albuquerque ordinance provides for the production of certified milk, no Bernalillo County dairyman has thus far possessed the moral courage to attempt the production of certified milk, although a considerable number nave made preliminary investigations as to costs.

We have provided in the Albuquerque ordinance for the production and sale of "Guaranteed Milk". This provision was made for the express purpose of providing an advanced grade of milk for the accomodation of fastidious consumers. These requirements are somewhat less strict than those for certified milk, yet the product is of better quality than the ordinary raw milk. Guaranteed milk under the terms of the Albuquerque ordinance requires a special permit from the health officer. Before issuing such permit, the health officer must assure himself that the producing dairy shall have a minimum score on the standard dairy score card of 85 points. On delivery to the consumer, guaranteed milk must contain not to exceed 20,000 bacteria to the cubic contimeter. This is in contrast to a permissible 500,000 bacteria allowed in ordinary raw milk. All persons engaged in producing or handling guaranteed milk shall be subjected to a thorough physical examination every six months, and shall present a certificate of freedom from communicable disease and from the carrier state. Moreover it is provided that the health officer may at any time require the physical and laboratory examination of the holder of a health certificate, whom he may have reason to suspect has become afflicted with a communicable disease. No persons who have been shown by such examination to be afflicted with any communicable disease shall be permitted to work in any capacity connected with the production, sale or distribution of such guaranteed milk. All dairy cattle shall be proven free from bovine tuberculosis before admission to a herd producing guaranteed milk. All cattle shall be subjected to the tuberculin test at least annually, and all reacting cattle promptly removed from the herd. Such guaranteed milk shall be immediately cooled to a temperature not to exceed 50 degrees, and must be maintained at or below this temperature. Guaranteed milk must be delivered to the consumer within 24 hours after being drawn from the cow. Guaranteed milk must be submitted to a bacterial examination weekly, and should the bacterial count at any time exceed 20,000 bacteria per cubic centimeter, the permit is immediately revoked. Guaranteed milk and guaranteed cream must be conspicuously and appropriately labelled. Sections also provide for pasteurized guaranteed milk and cream, although thus far, no producer of guaranteed milk in Albuquerque, has ever produced pasteurized guaranteed milk or cream.

For pasteurized milk, the producing dairy must score at least 70 points on the standard score card. The milk must be immediately cooled after being drawn from the cow, to a temperature not to exceed 65 degrees, and maintained at or below this point until delivered. Milk to be pateurized shall have a bacterial count of not to exceed 500,000 bacteria before pasteurization, and not to exceed 50,000 after pasteurization. Provision shall be made to prevent the re-pasteurization of old pasteurized milk. Provision is made that pasteurized milk shall not be delivered to the consumer when it is more than 48 hours old. Each pasteurizing plant must be equipped with a self-registering divice for recording the time and temperature attained in the pasteurizing process. Pasteurized milk shall be pasteurized by the holding process at a temperature of not less than 140 nor in excess of 150 for not less than thirty minutes. While the Albuquerque ordinance is defective in not requiring laboratory examinations to exclude persons suffering with communicable disease or the carrier state, the health department requires such certificates from all dairymen producing pasteurized milk, as a matter of policy, and so far has had no serious objections raised on this point. It is intended to include this provision when the time comes for making amendments to the ordinance.

A dairy which produces "Raw Milk" must score 75 on the standard dairy score card. Thus the producer of raw milk must attain a score higher by five percent than the producer of milk to be pasteurized. All cattle in such herd must be submitted to the tuberculin test at least annually. All employees must undergo an annual physical examination. Raw milk must be cooled to fifty degrees immediately after being drawn from the cow and held at or below this temperature until delivered. The bacterial

count must not exceed 500,000 to the cubic centimeter.

A general provision is made that milk from cows suffering from actinomycosis, foot-and-mouth disease, anthrax, contagious abortion, garget or inflamed udders, shall not be sold for human consumption within the city of Albuquerque. A further provision is to the effect that no dairy will be licensed to sell milk where any person living there transiently or permanently, is suffering from tuberculosis in any stage.

A final section carries the usual penalty clauses.

In summing up the requirements of a milk ordinance, we may say that it should provide for and define the requirements of the different classes of milk sold in the municipality; should provide for the inspection and grading of the methods and equipment used in producing milk; should exclude individuals ill with contagious diseases or carriers of infection from participation in the dairy business; should provide that the cows producing the milk are in sound health; and should provide for the publication of the scores made by the various dairies.

Naturally an ordinance which is as extensive in scope as in a dairy ordinance, should be revised and amended from time to time. To the careful student of the Albuquerque ordinance, there appear certain weaknesses and certain incongruities. I shall therefore mention but a few of these at the present time.

One of the most glaring defects is the requirement that raw milk, or milk that is to be pasteurized shall have a bacterial count of not to exceed 500,000 per cubic centimeter. At the time the ordinance was adopted, it was argued that with the long hot summer of Albuquerque, it would be impossible to even approximate the bacterial requirements of Eastern cities. After much discussion, a compromise was reached at 500,000. Many dairymen had demanded an even higher figure. With the passing of four years however, we find that over ninety percent of our dairies do not exceed 100,000 bacteria per cubic centimeter, that thirty percent are below 50,000, and that approximately ten percent of the dairies producing raw milk, seldom exceed the 20,000 limit, which was considered an exceptionally rigorous standard for our "Guaranteed Milk". When this ordinance comes to revision, these figures demand attention.

A second weakness in the present ordinance relates to the age of guaranteed and pasteurized milk. Guaranteed milk must not be sold later than 24 hours after its production, while pasteurized milk must be sold within 48 hours after pasteurization.

However, there is no provision requiring the stamping of dates on the bottle caps, and from an administrative viewpoint, it becomes exceedingly difficult to ascertain the age of the milk.

A third weakness in the ordinance relates to the laboratory examinations of the milk itself. Under the terms of the ordinance, the examinations made by the department can be made in any laboratory approved by the health officer. In actual practice, we have had some difficulty, due to individual dairymen sending samples to commercial laboratories, in some instances even to laboratories outside the state. Under these circumstances, the bacterial counts of the health department laboratory and those made by the commercial laboratories never agree. We realize that absolute agreement is impossible, but all too often, the variations are much too great to be within the limits of experimental error.

It should be evident that milk shipped beyond the state and having aged in transit, should yield a higher bacterial count than that obtained in a laboratory within the city itself. Much to our surprise and chagrin, in the majority of instances the counts obtained by laboratories outside our state, range from eighty to ninety percent less than those obtained in our local laboratories. One can readily see the trouble caused the health department when, in the official bacterial counts published in the newspapers, dairy A is reported as having a bacterial count of 37,000. The morning and evening papers immediately carry an advertisement giving bacterial counts, taken at weekly intervals by a laboratory outside the state, wherein the bacterial count ranges from 1800 to 2400. This advertisement carries heavy type caption "For the Information of the Public". This is a difficult situation. We believe that the dairy ordinance should prescribe a remedy for this situation. Our thought is that when a milk producer becomes perturbed about the health department score, he should appeal to the health officer, permit the health department to select samples of his milk and send them to three different laboratories selected by the department, and accept the resulting counts, averaging them if necessary.

As time has passed, there has been more forcibly impressed upon the writer's mind the weakness of a system whereby bacteriological examinations of milk are made at infrequent intervals. The average dairy is submitted to a bacterial count two or three times a year. The bacterial counts are published in the papers the same number of

times. The public reads these counts, and is either satisfied with its particular dairyman or is dissatisfied and promptly changes to one whose count is more favorable. The count which is published however, is merely an index of the particular quart of milk which was examined. The count may be exceptionally high, due to some accident in the technic of producing milk, and give an unfavorable impression of a milk which is excellent on the other 364 days of the year. On the other hand, the work of collecting samples and examining them requires several days. It is not beyond reasonable doubt that the news circulates among dairymen that the health department is collecting samples. Some dairymen doubtless do take advantage of this fact and for a few days, until they know their milk has been sampled, take especial extra precautions with their milk, in order to obtain a high rating.

We know certain instances where this has occurred. The remedy is more frequent inspection and sampling. The application of this remedy is prevented at the present time by the small budgets granted health departments for their activities.

In the actual operation of municipal milk control, it is essential that the inspectors have a good personality, are above reproach morally, and are conscientious in details. Slipshod, careless inspection reacts unfavorably upon the dairyman and tends to encourage him in laxity of methods. The inspection should be strict and severe. When the inspection is completed, the defects found should be discussed with the dairyman, and assistance given him in the correction of these defects. Advice can frequently assist the dairyman who is planning a new milk house or other equipment, to build acceptably and avoid unnecessary expense. Friendly co-operation is the keynote of successful municipal milk control.

The state of New Mexico has made an enviable record in the control of certain communicable diseases, notably diphtheria, scarlet fever and septic sore throat. Glandular and bone tuberculosis are fairly rare in New Mexican children. We believe that municipal milk control may assist us to lower the rates for these diseases still further.

In our work with the native people, we find cow's milk is scarcely used by the Spanish-American. We are attempting to instruct them as to the advantages and benefits to their children from using good cow's milk, and believe it is the duty of every municipality in the state of New Mexico to safeguard the municipal milk supply, in order that we may assure the consumer of such milk that he is getting the food value for which he pays, and that at the same time he is not ingesting the microorganisms of bovine tuberculosis, diphtheria, scarlet fever and septic sore throat.

DISCUSSION

DR. J. A. SMITH, Roswell, N. M., (Opening): Dr. Scott has given us a most excellent paper on one of the most important subjects we have before us. The keynote of his paper is the elimination of milk-borne diseases and that is the most important feature in the matter of municipal milk control.

In the past, we have often read of epidemics of typhoid and other infectious diseases that could be traced back along the routes of certain dairymen and the source of infection found in some carrier working in the dairy. In order to eliminate these diseases from being spread by the milk, thorough inspection of the employees, the milk barn, the milk house, the vessels used in handling and delivering the milk, and the methods used in handling the milk must be carried out. I think that the first is the inspection of the employees and persons handling the milk. They should have a thorough physical examination before being allowed to work with the milk in any way and be re-examined periodically. I make it a rule in Chaves county not to permit any one to handle milk who has an infectious disease of any kind, neither do I permit them to live in the house where infectious diseases exist and work with the milk.

The next step is to inspect the dairy herd and surroundings to ascertain if the cows are healthy and the condition in which they are kept. If there is a doubt about any cow being in good health a competent veterinarian should be called in to examine the cow and eliminate it from the herd if found not to be in good health. The cows should be kept clean; the udder should be washed thoroughly just before milking and the milking done with dry hands. After the inspection of the herd comes the inspection of the milk barn. It should be well lighted and ventilated and have the manure cleaned away at least every twenty-four hours and kept free from flies and dust. Flies are filthy and carry many bacteria and if they get into the milk we are going to have more or less infection in the milk. The milk house should be kept scrupulously clean and all milk vessels should be cleaned and sterilized before being used. There are many methods used in sterilizing milk vessels but my choice above all is steam; however the chlorine preparations are extensively used and some of them are very satisfactory.

Milk is a fine culture medium for bacteria: therefore, it should be cooled as soon as it is brought from the milk barn to the milk house so as to check the growth of bacteria.

The employees around the milk house should be taught how to handle the milk vessels so as not to infect them after they are sterilized. They should be taught not to let their hands come in contact with the inside or too near the top of the vessel. Disinfection of the milk vessels is very important, as they are distributed in so many different homes and the manner in which they are cared for in the different homes makes it very easy for them to be contaminated. so that if not properly sterilized disease could be easily conveyed in the milk. It is better to have a bottling and capping machine so that the employees do not have to handle the bottles or caps. The milk should be kept at a low temperature all the time from the time it is drawn from the cow until it is delivered to the customer.

The milk should be drawn from the cow as nearly sterile as possible and handled from that time until delivered with as much care to avoid contamination as a surgeon uses in handling his instruments and

dressings from the time they are sterilized for an operation until the operation is completed.

While it is necessary to have laws regulating dairies and it occasionally becomes necessary to resort to the courts to enforce these laws, I think the best way to get results is by educating the dairymen. The majority of them will make an effort to improve their methods when you explain to them the reason for making the change in the way they are doing things. Then publishing the score of all the dairies has a good effect in getting improvements in their methods.

DR. J. W. KINSINGER, Roswell, N. M.: I think there is just as much to say in regard to contamination of milk in the homes after delivery, as before delivery. There is great danger, at least it seems so to me, in this respect and it would seem that some provision should be made in the ordinance as to the care of milk after it reaches the home. We frequently see a pitcher or bottle of milk uncovered on the table after a meal, which stays there for sometime before it is put back again for use at another time. Of course this is only a suggestion on my part, but I really think there should be such a clause in the ordinance.

DR. M. K. WYLDER, Albuquerque, N. M.: I am certainly very glad Dr. Scott has spoken upon this subject. I believe it is a good time for it and that there is no subject of more far-reaching importance. Dr. Scott has performed wonders with the milk situation in Albuquerque, and the way in which he has gone about it commands our admiration. The dairymen feel that he is not a detective going around watching them, but rather that he is for them and is willing and anxious to show them how to get a better milk supply.

I think with Dr. Kinsinger that there is danger of contamination after delivery, just the same as there is before delivery, but believe the better way of bringing relief in this condition is by educating the public, pointing out the dangers of a polluted milk supply, and showing the advantages of a pure milk supply, which should be insisted upon. With a little education along these lines, the public will demand purer milk and will eliminate the man who will not keep his cows and his stables clean.

About pasteurized milk sold within 48 hours, there is one point that occurs to me, and it is this—that pasteurized milk gives us a sense of false security. Of course if it is sold promptly, as it should be, it is all right, but this idea of pasteurizing milk and then setting it away to be sold tomorrow or the next day, ought not to be permitted. Milk after it has been pasteurized does not sour like raw milk and you can take pasteurized milk from 48 to 60 hours after pasteurization which tastes sweet and is palatable to you, but which is more dangerous than raw milk. Therefore I believe that pasteurized milk gives the public a false sense of security.

DR. GEORGE S. LUCKETT, Santa Fe, N. M.: I am glad Dr. Wylder said what he did about the Albuquerque milk supply, because, as far, it has been the outstanding example of efficient milk control in New Mexico. Some of the other towns have recently adopted milk ordinances based on the Albuquerque ordinance and are getting better milk supplies, but Albuquerque has been at it longer and is getting better results.

In the matter of grading milk, I doubt if it is desirable to have a large number of grades. It seems to me that raw and pasteurized covers the field. When a city licenses milk dealers and undertakes municipal milk control, the public feels that the milk permitted to be sold to the public must be good. I do not believe there is much distinction in the public mind about the qualities of Grade A, B and C milk, as a rule. I think we should aim for a high standard of raw milk and that we should bring the standard up to what it is in Albuquerque at the present time.

The matter of the examination of employees is extremely important and it is most important that they should be examined *before* being allowed to go to work. We have had several very distressing examples of the danger of employing persons without first examining them. In one instance typhoid might have been averted had the employees been examined before he was permitted to go to work, because in every subsequent examination this person was found to be a persistent carrier of typhoid bacilli.

In the matter of counts, the average of a large number of counts should be published instead of a single count.

The question is often asked why we de not have statewide regulation of milk supplies. We have no means of enforcing such a regulation and no field inspectors, or field laboratories, and are without funds with which to employ these measures.

DR. C. L. McCLELLAN, Clovis, N. M.: This is a little out of my line of business, but I want to take the liberty of saying a few words on this subject. The paper was a very fine one, indeed, and I enjoyed it very much.

Our trouble here is in lack of funds to regulate the milk supply. We have to go to the county commissioners to get the funds to do this and I surely wish the commissioners could have been here this morning and heard this paper. They are the persons who need the information and they need it more than we do. I think we should have some way of supporting our county health officer and city health officer. We passed a milk ordinance here to regulate our dairies and you never heard such a howl go up in all your life. There are so many people here who go up and down the streets selling milk, who are not licensed dealers, and the ordinance is absolutely ignored. The small towns are not appreciative of the benefits to be derived from a milk ordinance and I am very glad we are going to have some education of the laity along this line. I would much rather have heard a paper upon this subject at the public meeting we had last night than the one that was read, as I think it is a more important subject and one the public should hear.

I think there is great danger of contamination after delivery of the milk. The ordinary dairyman delivers milk on the front porch where it may sit for two or three hours before it is brought in the house and put in the ice box. Flies gather around it and consequently we may get all sorts of infection right at our own homes. The point I wish to emphasize, however, is that we must get busy and educate the laity about the importance of this matter.

DR. JAMES R. SCOTT, Albuquerque, (Closing): I want to thank Dr. Smith for opening the discussion as he did. I read Dr. Yater's little note about boiling down the scientific papers, so there were many details covered in the Albuquerque ordinance that I did not feel that I had time to incorporate in my paper.

Dr. Smith spoke about a number of things we are trying to enforce.

Dr. Kinsinger particularly told us one thing that is important and that is the care of the milk after delivery to the consumer's home. The only thing we can do to remedy this is to educate the consumer to handle the milk properly after it gets into the home.

In our ordinance, we have set forth that the milk bottle shall be used for no other purpose than containing milk. However, that feature is violated every day. During the canning season, the house-

wife uses the milk bottle for jelly, preserves, etc. They may send around the corner for kerosene, or gasoline and the milk bottle is the nearest and easiest container. Often in our own work we find the milk bottle—containing a specimen of urine—brought to the physician's office. This whole question was up before the Bernalillo County Society and we discussed the possibility of using paper milk bottles which could be used only once.

So far as spreading diseases is concerned, I do not think this a particularly important problem, but it does have a bad effect on one's esthetic taste to turn in a bottle that has contained a specimen. We have agreed more or less among the members of the medical society in Albuquerque simply to break and destroy bottles coming to the doctors' offices containing specimens and to do what we can to educate our patients to understand that this is not a proper or legitimate use for the milk bottle.

So far as having our county commissioners back of us, there is a great deal of work necessary to be done along that line. I am very fortunate in Albuquerque in having one of our milkmen as a progressive county commissioner. He is absolutely behind the health department in the milk question. A short time ago we had a little fuss over the bacterial count of one of our dairymen, who objected to the score that was published in the paper. I heard about it and called him up and he said that he did not intend to talk to me about it, but that when the proper time came he would get a lawyer. When the lawyer came around, he looked over the ordinance with the commissioner and that was the end of it. If the health officer will talk to his dairymen, and point out to them where they can make changes that will not cost much financially and yet be a great benefit, it will not be long before one can educate the dairymen to produce better milk and the small dealer who has not the desire to do so, soon gets out of business.

In Albuquerque, the public is reading the scores that are published in the papers. Many call the office and ask "who sells the best milk in town?" This puts me sometimes in an embarrasing position and I have to tread lightly, or will be accused of favoring the dairymen. However, with the assistance of the county commissioners, so far I have gotten along nicely.

This fall I expect to go to the Pacific coast to the annual dairy exhibit and expect to carry a bunch of entries from the Albuquerque dairymen. If anyone here has an entry they would like to send in, I shall be glad to take it.

BLOOD MATCHING FOR TRANSFUSION, Including the Method of Transfusion by the Citrated Blood Method

LEE YATER, M. D., CLEBURNE, TEXAS

My aim in writing this paper is to bring to your attention the ease and simplicity of a method that is truly life saving. Those of you who have given only superficial thought to this subject may have your attention directed to this, and in your work save lives that would otherwise be lost.

I will mention only a few of the conditions calling for transfusion: loss of blood in large amounts and the anemia following; anemia not due to hemorrhage; pernicious anemia; anemia due to sepsis; hemophilia and malnutrition following some of the acute infections of infancy.

The most important point to keep in mind is the selection of a suitable donor for transfusion. The first requisite of a suitable donor is that his blood match the blood of the patient. By matching we mean the blood belonging to the same group. The cells of the donor must in no case be agglutinated by the serum of the patient but in an emergency you may use a blood in which the donor's serum agglutinates the cells of the patient.

The technic of matching is simple, and I will give you the method that I have found entirely satisfactory. Prepare four test tubes and into each of two put 1 c. c. of a 2% solution of sodium citrate; the other two remain empty. Label one tube of citrate and one empty tube with the name of the patient, the other pair with the name of the donor. With sterile 5 c. c. syringe withdraw 5 c. c. blood from the patient. Put three drops of the blood in the patient's tube of citrate solution and the remainder in the patient's empty tube. Repeat the same procedure with the donor. Either allow the blood to clot and the serum separate or centrifuge the blood and separate the serum. You will now have a clear serum from both the patient and donor. Also you will have your cell suspension from both. Prepare slides by making a ring with vaseline, marking one P and the other D. Take a wire loop made by bending a fine wire around a lead pencil, and put two loopsful of serum from the patient's tube in ring P. Pass the loop through the flame and when cool put two loopstul of the donor's serum in ring D. Then place one small drop of cells from donor's suspension in serum in ring P and one small drop of cells from patient's suspension into serum in ring D. Mix and watch for agglutination. You will soon learn to tell when agglutination takes place by the arrangement of the cells. In fact you will hardly need a microscope after you have tried this a few times. By observing under a low power you will see the cells gather-

Read before the New Mexico Medical Society, at its Forty-third Annual Session, at Clovis, New Mexico, May 19 to 21, 1925.

ing in clumps when the bloods do not match whereas the cells will remain entirely separate if the patients are in the same group. It will be better if there is no agglutination in either ring after half an hour, but in an emergency you can use the donor if his serum agglutinated the patient's cells. After you have selected your donor and the Wassermann test is negative you are ready for the transfusion.

Place 25 c. c. of 2% citrate of soda solution in the bottom of a one liter flask. (It is better to have a graduated flask but you can use a plain flask.) Pass a rather large needle into one of the large superficial veins of the donor; (it is best to insert the needle against the blood current; that is, with the point toward the hand if you are using a vein in the bend of the elbow). Allow about 250 c. c. of blood to run into the flask, keeping the flask in motion all the time to mix the blood and citrate solution. After about 250 c. c. has been collected, put in 25 c. c. more citrate solution and allow the blood to flow to the 500 c. c. mark. If you use more than this amount, keep adding the citrate solution in the same proportion; that is, 25 c. c. to each 250 c. c. of the combined solution. In other words, if you use 750 c. c. of finished blood and citrate, there will be 75 c. c. citrate and 675 c. c. blood.

This procedure may be followed out in a room other than that of the patient, and, when finished, the blood carried into patient's room and placed in basin of warm water to keep it at blood temperature until the patient is ready to receive it.

The needle is now introduced into patient's vein and attached by rubber tubing to irrigating flask. (The tubing and bottom of flask are first filled with warm saline solution.) The citrated blood is then transferred to flosk and allowed to flow slowly into patient's veins.

You do not have to hurry in using this method, and if you find you are unable to enter the patient's vein by puncture, you can take your time and cut down on the vein and tie the needle in before attaching the rubber tube from the irrigating flask. All danger of the blood coagulating is then removed, and if you keep the blood warm a delay of half an hour will make no difference.

I wish to state again that the chief point of consideration in the selection of a donor is that his cells will not be agglutinated by the serum of the patient.

DISCUSSION

DR. JAMES R. SCOTT, Albuquerque, N. M. (Opening): It was not until about three minutes ago that I knew I was to open this discussion, so I want to state in advance that practically all I know about the subject of this paper is from a laboratory point of view.

There is one thing I am very glad the author emphasizes—and that is the necessity of matching the blood of the patient with that of the donor. There has been a great deal in the literature the past few years upon the subject of grouping possible donors of blood according to the Moss classification, into groups 1, 2, 3, 4, etc. I have had the experience in a large hospital of seeing a list made up of available donors. When an emergency arose and a patient needed blood, a hurry-up call was sent out for a donor, and it was always a routine to match the blood of the donor with the blood of the patient, sometimes even in spite of the fact that they apparently fell under the same blood group. I have a number of times seen cases where I thought it would be a very unsafe and unwise procedure to transfuse blood from a particular donor nto a particular patient, and I do not think that we can rely upon the Moss system in its entirety. Of course, in an emergency case, you sometimes have to get the first donor available, and it is true that in cases of emergency, as Dr. Yater has stated you may use a blood in which the donor's serum agglutinates the cells of the patient. We have never felt, however, that this was safe if you can secure a suitable donor whose blood matches that of the patient, in a reasonable length of time.

As far as the method of transfusing blood is concerned, I have never done any of that work myself. In my own mnd, however, the citrate method is the one I would choose. Taking it all in all, I think this method is much superior to all others.

I have enjoyed the paper very much and think it is a very good one to bring before a gathering of this sort, because all of us who are located in sparsely settled parts of the country are apt to run up against these cases in an emergency, and you do not need a highly skilled laboratory man to do this work for you. If you go ahead and try, you will find that you will be able to match the bloods as well as a laboratory man.

DR. LEE YATER, (Closing): I realize with Dr. Scott that it does not take a trained laboratory man to do this work and that any of you can do it with a little experience. The only hope I had in bringing this subject to your attention was that maybe it might start you to handling your cases if you saw how simple it is. Of course in the larger centers, the men have the advantage of hospitals and trained technicians to do this for them, but out here in the sparsely settled parts, we have to do it ourselves. For those who do not have the advantage of hospitals, laboratories, etc., I want to state that you will find the method described a very simple yet satisfactory one, and you will save a great many lives perhaps, if you will follow it, that might otherwise be lost. All you have to do is to follow the directions.

I have the patient come to my office, then get the donor, pass upon the blood and effect the transfusion. You will soon learn that you will not even need the microscope in matching, as with a little experience you will be able to detect in a few minutes if the blood is a match.

I shall feel fully repaid for any trouble it might have been to present this paper, if only one life is saved by it. If you men who have not taken advantage of transfusion will try it, you will find it of great value in the treatment of children's diseases. We even use it with infants. You will find that many men are using transfusion in this way by the citrate method, and if you use ordinary care with this method, you will get by with it all right.

CHRONIC APPENDICITIS

HENRY SNURE, M. D., LOS ANGELES, CALIFORNIA

The roentgen ray diagnosis of chronic appendicitis deserves repeated consideration and discussion because the roentgen ray signs are not as definite as they are in gastric and duodenal ulcer or other lesions of the gastrointestinal tract. The term "chronic appendicitis" itself is rather loosely applied, at times seeming to be just a term in general to indicate pain and muscular rigidity in the lower right quadrant of the abdomen. Articles have been published 1 (Sup. Fig.) in medical journals under such headings as "Chronic Appendicitis: It Is a Myth?", which indicate the lack of agreement on the subject; therefore, the clinician and pathologist, as well as the roentgenologist, are somewhat confused as to just what should be considered under this term. In my observation of patients coming into the hospital with a clinical diagnosis of chronic appendicitis the symptoms in about 50 per cent of these cases are proved by roentgen ray examination, operation or post-mortem, to be due to lesions in organs other than the appendix. A considerable percentage of cases do not improve after the removal of an appendix pronounced abnormal by the pathologist; one reason for this lack of improvement evidenced by roentgen ray seems to be due to the formation of cecal adhesions and stasis (caput puddling) following operation. Sometimes coexistent pathology in the abdomen has been overlooked.

If the roentgen ray examination served only to locate the appendix it would be well worth while for it is surprising how far from McBurney's point the appendix may be found; five or six inches is not unusual. L. T. LeWald[2] himself reports 45 cases of left-sided appendices.

From the viewpoint of the pathologist it would seem that tuberculosis of the appendix and cecum is about the only true type of chronic inflammation found in the appendix region and that the term chronic appendicitis usually means recurrent attacks of the acute type. Recently it has been shown that some of the flagellates penetrate the intestinal mucous membrane, causing a chronic inflammation by their presence.

Part of the results of recurrent inflammation are adhesions and scar tissue. An excellent article by Dr. Franklin White[3] on the pathological findings in these cases is in the January number of the American Journal of Roentgenology. He quotes as follows: "Mallory, in 4,000 routine autopsies at the Boston City Hospital found the appendix NORMAL IN GROSS in 95 per cent. There were no adhesions, no kinking, no scar tissue, no obliterative changes, no constriction, no deformity of shape; not one of the signs so easily found by roentgen examination. In 3 per cent of the autopsies there were adhesions, scars, or obliteration of the appendix; in 2 per cent there was inflammation, gangrene or perforation. There were three concretions in 4,000 cases. In short, when we get roentgen evidence of gross, chronic canges in the appendix they are not universal. They have importance. They are found in only about 5 per cent of adults."

The roentgen ray study of the appendix began about 1912 when Dr. James T. Case[4] reported a large series of cases observed by this method. Technic differs but little among competent roentgenologists, it is a part only of a complete barium meal examination which is studied fluoroscopically and from films in both the horizontal and upright positions with observations made at various times over a period of several days. If the appendix remains filled after the cecum is empty it is observed at intervals of several days to determine emptying time. The longest retention in an appendix which has been reported is four months. One large film of the urinary tract and several smaller ones of the gall-bladder region are made before giving the barium meal. By this means calculi are found, size of kidneys determined and lesions of the spine and pelvis noted. Any questionable shadows in the chest observed fluoroscopically should be checked by films to rule out pleurisy, unresolved pneumonia, subphrenic abcess or tuberculosis in the lower right lung area. The complete barium meal will determine such conditions as gastric or duodenal ulcer, gall-bladder pathology and particularly pathology in the appendix region such as carcinoma, tuberculosis, diverticulitis and the various kinks and bands. While some of these latter conditions are not of frequent occurrence one of these is liable to be present in the case you are vitally interested in and when discovered by someone else who has studied the case more thoroughly, it is rather embarrassing to say the least. Examination by barium enema only is practi-

Read before the California State Medical Association, at its Annual Meeting at Yosemite, May, 1925.

cally useless as the appendix seldom fills by this method. Frequently films do not show the filled appendix because other filled organs, such as the cecum, are superimposed; also foreshortening in the film of a normal curvature of the appendix may resemble a sharp kink. Reports of the percentage of appendices that fill varies with different workers from 50 to 75 per cent but this variation in filling is more apparent than real and is due chiefly to the variation in the time of observation. The best time is usually 4 to 10 hours after ingestion of the meal. The kind of meal used, whether malted milk, buttermilk or gruel seems to make little difference.

The appendix when filled gives such roentgen ray findings as kinking, segmentation, fixation, partial obliteration, clubbing, funnel shape, etc. When not filled very little can be said about it, however tenderness over its usual location on the cecum is suggestive. There is some difference of opinion as to the importance of filling; George and Leonard[5] feel that all normal appendices should fill; E. H. Skinner[6] feels that only the pathologic ones do fill. That these views are extreme is easily proved by reviewing hospital charts of gastrointestinal cases, thereby checking up on the operative and laboratory findings. Those that remain filled several days after the rest of the bowel is empty are most likely pathologic, particularly if tenderness over the appendix is also present. Quite a number of cases have been reported where retention was the only sign and appendectomy gave prompt relief. It has been noted that the appendix in the asthenic person empties more freely and is less subject to infection than in the sthenic. Maguire Newton[7] reports 20 cases of acidosis in children from 2 to 10 years of age cured by appendectomy, the chief sign having been prolonged retention, sometimes with adhesion, but no tenderness on palpation in any case. Segmentation, which is probably caused by peristalsis, is of no definite value, as gross section shows no cause for this finding. However the English writers state that segmentation is usually present in their pathologic cases. Irregular segmention can be caused by partial obstruction from concretions and clubbing may take place. This suggests stasis and favors infection. The funnel shaped appendix has been described by Jordan[8] who claims the same has been found to be pathologic when removed. Partial obliteration which was formerly supposed to be due to old age atrophy is now generally conceded to be due to previous infection and scar formation. Tenderness over the appendix itself which moves with it, if same is movable, is an important point. In women great care should be taken to rule out tubo-ovarian disease. Fixation, kinking or angulation may mean previous rather than recent infection. The coexistence of tenderness over the appendix, prolonged retention and fixation are almost sufficient to make the diagnosis of recurrent appendicitis from the roentgen ray examination alone; however this should never be done as none of these signs are absolutely diagnostic and the clinician is apt to be mislead to placing too great an importance in them.

In all cases the roentgen ray findings should be correlated with the clinical findings and when used in this manner they will greatly increase the percentage of correct diagnoses.

REFERENCES

1. Eastman, J. R.: Indianapolis M. J. June 1923: Surg., Gynec. & Obst. 38: 75 (Jan.) 1924.

2 Le Wald, L. T.: Radiology, 1925, Vol IV, No. 4, pg 316.

3. White, Franklin W.: Am. Jour. Roentgenol, and Rad. Ther., XIII, No. 1.

4. Case, James T.: Am. Jour. Roentgenol., August 1924.

5. George and Loenard: The Roentgen Diagnosis of Surgical Lesions of the Gastro-intestinal Tract. Colonial Medical Press, Boston, 1915.

6. Skinner, E. H.: Am. M. Asso., 1920, LXXV, 1614.

7. Newton, Maguire: Quoted. Am. Jour. Roentgenol. and Rad. Ther., XIII, No. 1, pg 26.

8. Jordan, Alfred C.: Chronic Intestinal Stasis. Oxford Medical Publications, 1923.

9. Bettman, H. W.: J. Am. M. Asso., 1924, LXXXIII, p 1216.

10. Childs, S. B.: Radiology, 1925, Vol. IV, 2, p. 107.

GASTRIC ULCER. In the medical management of gastrict ulcer, definite indications for surgical intervention may arise. The two developments which may arise in connection with the treatment are, (1) the failure to neutralize acidity because of excessive night secretion, and (2) alkalosis. In addition to these, the other indications fall under the head of organic defects which are unchanged by treatment, such defects being demonstrable by x-ray. All of these conditions may be detected in the first four weeks of hospital management.

Where x-ray defects fail to improve, they may be of two kinds: (1) cicatricial deformities of healed ulcers, which call for surgery only when they cause obstruction; (2) defects unchanged by ulcer treatment and which, by this, are probably malignant. During the first two weeks of medical management the niche should show definite diminution in size and after a month should no longer be visible in fluoroscopy, otherwise no time should be lost in substituting surgical for medical management.

Surgical Indications Arising During the Medical Management of Gastric Ulcer. Sara M. Jordan, M. D., the Lahey Clinic, Boston, Mass., Boston Med. and Surg. Jour., June 4, 1925, p. 1106.

A CASE REPORT

Tack in Lung Six Years Removed by Bronchoscopy

W. E. VANDEVERE, M. D., EL PASO, TEXAS

A. M. White, male, age 8, well developed but emaciated was referred to me July 8, 1925. Five brothers and one sister living and well. No tuberculosis, cancer, or mental diseases in family.

This patient when two years old had a severe illness, which was thought to be influenza. According to his parents he was seized with severe coughing spells, had a high fever and for three weeks was not expected to live. Since then he has been in bad health, and because of severe cough, expectoration and wheezing, has had various diagnoses of pulmonary tuberculosis, asthma, and bronchitis. Two years ago his symptoms became more severe. Six months ago he was thought to have had bronchopneumonia. He coughed a great deal and expectorated sanguino-purulent material.

Two months before I saw this patient he had a very severe spell. His temperature rose to 103° to 105° F. each day for three weeks. Suddenly one day he coughed up a large amount of foul pus (two or three cupsfull his parents stated). He was then taken to Roswell, N. M., where the accompanying x-ray picture was taken (Fig. 1).

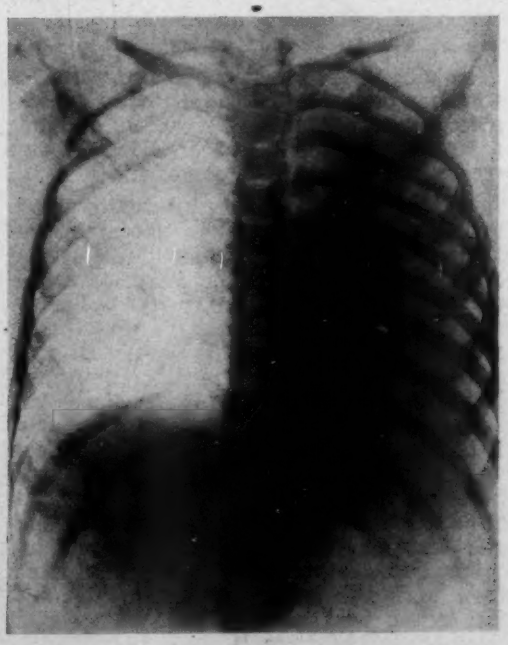


Fig. 1. Tack in left bronchus

The picture showed the cause of his trouble to be a tack in the left bronchus. Five weeks later the boy was sent to me by Dr. W. E. Goodsell of Roswell. A flouroscopic examination made by Drs. Cathcart and Mason upon his arrival in El Paso showed the tack had shifted to the right bronchus.

The next day under ether anesthesia a Killian bronchoscope was passed by aid of Lynch's suspension. The tack was located in the right bronchus, and quickly removed by means of Jackson's long alligator forceps (Fig. 2). Within twenty-four hours the cough which he had had for six years disappeared.

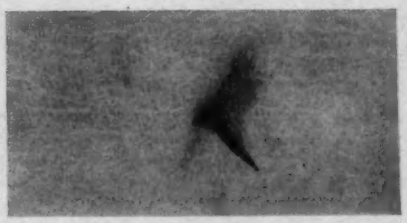


Fig. 2. Tack after removal (natural size).

Convalescence was uneventful and on the third day the patient was allowed to return to his home in New Mexico. At this date, which is six weeks after operation, his cough and expectoration have entirely disappeared, and he is rapidly gaining weignt.

REMARKS

It is probable that the tack had remained in the bronchial tube since the patient was two years old, when he was thought to have had a severe attack of influenza. Metallic bodies often stay in the lungs for years before causing trouble. On the other hand, organic bodies will quickly cause a fatal pneumonia unless removed. This is especially true of peanut kernels.

The interesting points in this case are:

1. The aspiration of a tack into the bronchial tube and its presence there unsuspected for probably six years.

2. The similarity of the symptomatology of such a foreign body to pulmonary tuberculosis and asthma.

3. The importance of an x-ray examination in all obscure chest conditions.

4. The shifting of the tack from the left to the right bronchus.

5. The prompt recovery after the institution of proper therapeutic measures.

PEMPHIGUS VEGETANS: REPORT OF CASE
(Illustrated)

A. M. WASHBURN, M. D., GAMERCO, NEW MEXICO

Pemphigus is defined as an acute or chronic inflammatory disease of the skin, characterized by a bullous eruption, arising from apparently normal skin, accompanied by constitutional symptoms of varying intensity.

Although there is considerable divergence of opinion among dermatologists as to just what diseases to include under the term pemphigus, it is generally accepted as a clinical entity, and embraces a group of bullous eruptions, the symptoms and course of which are of a quite uniform character.

Fig. 1. Front View; ten days before death.

The more commonly described forms are acute pemphigus, chronic pemphigus or pemphigus vulgaris, pemphigus vegetans, and pemphigus neonatorum.

Since the case I am reporting is one of pemphigus vegetans, I shall briefly review the characteristics of this form of the disease.

A rare fore of pemphigus was described by Neumann in 1886 under the name of pemphigus vegetans. The earliest manifestations are usually seen upon the mucous membrane of the lips, cheeks, tongue or pharynx as whitish patches and blebs, and after a few weeks the typical blebs appear upon the skin. Instead of going through the usual crusting and disappearance, the rupture of the blebs leaves a raw surface showing little tendency to heal, with new blebs frequently appearing about the border. Greyish papillomatous or condyloma-like vegetations appear which give off an extremely offensive odor. Fissures covered with greyish exudate appear at the corners of the mouth and the mucous membrane of the lips is often raw and crusted. A constitutional disturbance appears during the course of the disease and as the disease progresses, the patient becomes gradually weaker and lapses into a comatose condition, with death occurring after a few weeks or months, in most cases. The blood often shows an eosinophilia.

As to the etiology, pemphigus is variously regarded as a toxemia, an infection, as a functional nervous disturbance, and more recently as an endocrine imbalance. A diplococcus has been found in the serum of the blebs in the acute form. Pemphigus occurs in both sexes but is supposedly more common in children than in adults. It is not thought to be due to syphilis.

The diagnosis is made upon the uniformly bullous character of the eruption accompanied by constitutional symptoms of more or less severity, and the invasion of the mucous membrane of the mouth.

Pemphigus must be differentiated from erythema multiforme which shows a predilection for the extensor surfaces of the forearms and backs of the hands, and the eruption is erythematous and vesicular as well as bullous. Dermatitis herpetiformis exhibits multiformity of lesions with rare involvement of the mucous membranes, chronicity, with or without remissions, and tendency to grouping, disposition to change of type, and severe itching. The bullous syphiloderm is rarely seen in adults and the eruption is usually situated on the palmar and plantar surfaces. Pemphigus vegetans may be confused with a vegetating syphiloderm, especially during the early stage with the lesions in the mouth, but the course and a negative Wassermann serve to differentiate it.

Read before the New Mexico Medical Society at its Forty-third Annual Session, at Clovis, New Mexico, May 19 to 21, 1925.

CASE REPORT

C. B., a Mexican, coal miner, 39 years of age, was admitted to St. Mary's Hospital, Gallup, New Mexico, on April 10, 1925, giving the following history: About two months prior to entering the hospital, he had noticed several crusted lesions on his head and a few pimples on his chest. He went to the dispensary of the coal company where he was given some ammoniated mercury ointment and instructed how to use it on the skin lesions. He did not again report but sought advice from another physician. On April 10, 1925, my colleague, Dr. E. D. Abraham, was called to attend this man at home, and found him in bed, acutely ill, with numerous abrasions of the mucous membrane of the mouth and many bullous skin lesions. A provisonal diagnosis of secondary syphilis was made and the man sent to the hospital for treatment.

On examination, (Fig 1 and 2), the head was covered with crusts resembling impetigo contagiosa. There was a rather deep fissure at the left angle of the mouth covered with a greyish exudate. The mucous membrane of the cheeks, tongue and gums showed whitish patches resembling the specific mucous patch. The neck, both anteriorly and posteriorily, had many vesicular lesions and thick crusts, as did also the ears. On the face, chest, abdomen and back were numerous blebs and crusts, the blebs arising from apparently normal skin, and with no particular tendency to grouping. These blebs ranged in size from one-half to three centimeters in diameter and were filled with a clear serum which later became hazy. There were large thick crusts in both axillae and large, thick crusts on the anterior chest in the sternal region. Blebs and crusts were present on the inner surfaces of the thighs and in the pubic region. There were a few isolated blebs on the flexor surfaces of the forearms. The legs, hands and feet were not involved. Successive crops of blebs arose in the axillae and on the inner surfaces of the thighs, the auxillary areas soon becoming covered with papillomatous crusts. Many of the ruptured blebs left a reddened surface showing little tendency to heal or crust. The breath was foul and the odor from the lesions was very offensive. The patient stated there was no itching but a slight burning sensation of the skin.

The family and past personal history were of no significance.

The blood count showed red cells, 5,140,000; white cells, 10,900; polymorph. 76; small lymph. 19; large lymph. 4; monuclears, 1; hemoglobin was 68. The Wasserman was negative. The urine was acid, specific gravity 1,012; albumin positive, many pus cells.

Blood cultures were made and the serum from the blebs examined. The alboratory reported many eosinophile cells in the serum and a gram negative diplococcus. The State Public Health Laboratory reported a short chain of streptococcus growing readily on laboratory media, cultured from the blood.

Arsenic quinine and strychnine have been largely used in the systemic treatment of pemphigus in conjunction with local applications to the lesions.

On April 10th, the patient was given 0.9 Gm. of neosalvarsan, which dose was repeated on April 13th, but with no apparent effect on the skin lesions or on the general condition. The blebs were ruptured and a dusting powder of zinc oxide and boric acid applied.

Fig. 2. Back View.

On the basis that we were dealing with a streptococcic infection, and since the administration of arsenic seemed futile, the patient growing steadily worse, we decided to use Mercurochrome 220-soluble intravenously. On April 18th, 30 c.c. of a 1% solution of this drug was given, with a rather typical reaction (Fig. 3). The dose was repeated on April 22nd, with a second sharp rise of temperture and a hard chill of one-half hour duration, after which the temperature dropped to 99°. The pa-

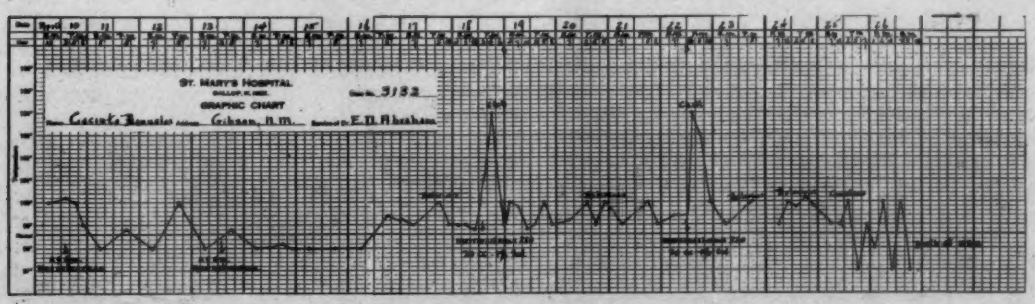


Fig. 3. Temperature Chart.

tient was very restless and delirious during his stay in the hospital, becoming gradually weaker and fell into a comatose condition with death on April 26th, the seventeenth hospital day.

Permission to perform an autopsy was not obtained.

This case is reported because of the rare occurrence of pemphigus. We feel that we were dealing with a streptococcic infection and had hoped for favorable results from treatment, but therapy was of no avail, the case coming to the usual fatal termination.

DISCUSSION

DR. J. W. KINSINGER, Roswell, N. M. (Opening discussion): I myself have been able to find very little literature on this subject. I have never seen a case, but the paper is an interesting one, especially for this society, because I believe this is the first time we have ever had one on this subject; at least it is for many years. The paper is a splendid one and has been given a good deal of thought and I think the doctor was fortunate in making his diagnosis, because many of us would probably have been more tardy in making a diagnosis than he was and would have offered some sort of treatment.

The peculiar part of this disease, as I understand it, is that it is nearly always fatal, that it comes on rather abruptly and that there is no interval between the primary lesion and other lesions and no one crop of lesions is perfectly healed until the new crop appears. Also, that rarely is there a time when there are lesions on the skin and mucous membrane that the disturbance of the blood curve is not much affected. The temperature, except when disturbed by something else, runs relatively uniform and at times rather below normal.

The case that is reported shows that there had been only two exacerbations of the temperature and they were after the intravenous treatments of arsenic and mercurochrome. The blood count was practically normal, both in quality and quantity, so we cannot consider this a hematogenic disease. It must necessarily, therefore in my opinion, be a local disease, with the final result of an extreme toxemia that destroys the patient's life, because the patient became toxic and died in coma. From the description, I would suppose that the case died entirely from toxemia. It is difficult to tell from the paper what the real cause of death was and I would like to have the doctor state when he closes the discussion what his opinion is as to the cause of death.

The literature we have on this subject is not very plain and from what I can find this is a very rare disease, though we may at any time come in contact with a case. It is very peculiar and different from all other skin diseases. When a person has had a case once, I do not believe it would be very difficult to make a diagnosis. I feel that I would be able to make one now, though I doubt if I could have before listening to this paper.

I would like to ask Dr. Luckett if he has ever had a report of a case of this disease since he has been in the Health Department, previous to this one.

DR. J. W. CATHCART, El Paso, Texas: I think the doctor is to be congratulated on taking a photograph of such an interesting case. When we get rare cases, we should make permanent records and there is no record that equals a good photograph. I should like to have the doctor tell us just what stage of the disease the photographs were taken. I have never seen this type of disease and would like to know if later on the lesions were more numerous than they are shown in the photograph.

DR. A. M. WASHBURN, Gamerco, N. M. (Closing): As to Dr. Kinsinger's question as to the cause of death, I can only believe that death was due to toxemia. From our laboratory report, there was apparently a blod infection. Aside from the skin lesions, the man ran a septic temperature throughout the course of his illness after he came under our observation, and I think that death was undoubtedly due to toxemia.

As to whether the picture showed the condition at its worst stage and whether the lesions were the same throughout, I might say that they were practically the same. The pictures were taken just before we ruptured the blebs. After the blebs were ruptured there were some changes, but the new crop appeared right away. The pictures were taken about ten days before the man died. You can very readily see that the man got up out of bed, got on a chair and walked around at the time the pictures were taken. He was worse after that and went down hill very rapidly.

It was rather a hard case for us to handle, as we did not have the means. We had no male nurse to take care of a case of this type and the female nurses were afraid of the man—afraid he had something they might catch.

CONGENITAL VALVE FORMATION IN THE POSTERIOR URETHRA

W. G. SCHULTZ, M. D., TUCSON, ARIZONA

The relative incidence of this condition is very rare, so far as case reports and a study of the literature is concerned, but, as the case report which is to follow shows, it may go unrecognized throughout life unless intercurrent condition causes it to become manifest. It may be a fairly common condition or at least much more common than we are wont to think and should therefore be kept in mind when dealing with cases of disturbed urinary function of this nature.

Partial occlusion of the urethra caused by a membrane across the external meatus, or a densely adherent foreskin, are fairly common conditions and so easily recognized and treated as to deserve only passing comment. However, obstructions within the urethra itself may go unrecognized for years or, even when suspected, may not be confirmed until examined on the post-mortem table.

In this article I wish to deal chiefly with this anomaly of the posterior urethra alone. The developmental basis for this malformation is a hyperplasia of the lower portion of the colliculus seminalis, especially the inferior striae proceeding therefrom to form a membrane or valve which may or may

Read before the Pima County Medical Society at Tucson, Arizona.

not more or less completely obstruct the flow of urine. As to the genesis of this valve-like formation, many and varied views have been given us by numerous observers, but as yet we have relatively little accurate information concerning their origin at the distal extremity of the colliculus seminalis. Wilckens states that the condition is due to the overdevelopment of the normal folds of the urethra (the inferior striae) which process coincidently causes a narrowing of the urethra at this site and that the valves once started become greater from the pressure of urine. It may be that the proliferative INFLAMMATORY changes found in some of these cases are in a considerable measure the result of continuous irritation from the pressure of urine but this does not help in any way to explain a case as I am reporting, in which the valvelike structure must certainly have been present since fetal life and yet no urinary symptoms manifested themselves and it produced no obstruction to the urinary stream until after a stricture had developed at the bulbomembranous junction, which caused the urinary stream to back up against the valve flaps and produce their closure. It seems best to regard this condition as one of arrested development since its occurence it at the point of union of the entodermal and ectodermal portions of the urethra. These so called valves or congenital strictures may have their origin as early as the fourteenth week of fetal life and may later produce secondary sequellae such as dilated posterior urethra, and dilated trabeculated bladder with hydroureters and hydronephroses and may therefore account for some of the unexplained deaths of very early infancy. The valve formation is due to the growth and attachment of the tip of the colliculus to the roof of the urethra, and occurs at the time of marked epithelial activity of this and associated parts, namely the invagination of the verul mucosa to form the first observed true tubules of the verumontanum, and it is at this time also that the diverticula of the seminal vesicles are first noted.

The symptoms of this condition in small children are sometimes varied. Of course we have to recognize that there are other conditions which may bring about somewhat similar symptoms; namely, the spinal cord and other nerve lesions, and perhaps some idiopathic conditions. Urinary incontinence of long standing is very often a symptom of this condition and does not in itself justify urological examination, but when accompanied by diminished urinary output and high blood retention, it should never be witheld so long as no other cause for the condition can be definitely established.

CASE REPORT

G.B .S., male, age 31, mining engineer. Family and past history of no importance. Urological history negative until the fall of 1917, in army service. After suspicious exposure he reported to an army prophylactic station and was given a prophylactic treatment which caused him a great deal of distress because of an unusual amount of burning which persisted throughout the night. The next morning he noticed a white urethral discharge and urination was accompanied by a great deal of burning. He reported to the medical officer and after a microscopical examination was told that there were no gonococci present, but was asked to report the next day for another examination which was also negative. Repeated examinations followed with the same results, but he was put on an injection treatment and was told hat he had gonorrhea. The condition subsided in about two weeks and he was told that he was well. He did nothing more about it until he was discharged in the spring of 1919 when he reported to his home physician for an examination to ease his mind as to the genito-urinary condition. The physician found a urethral stricture which he diagnosed by means of sounds and treated, using the same instruments. It yielded quite readily to this means of treatment and would admit a size 30 F. sound without difficulty after the fourth treatment. At this time he moved to a different locality and following the advice of his home physician he consulted a doctor in his new location with the intention of continuing the treatment. The doctor after passing a sound told him he had a false passage and advised him to leave off the treatment which he did.

In the spring of 1922, three years later, while in Honduras he contracted gonorrhea, which was treated for six months with many improvements and exacerbations. The doctor after some time passed a sound and found a stricture deep in the urethra which he was able to pass with a small sound, but found another obstruction at the neck of the bladder which he was unable to pass. After many unsuccessful attempts he finally passed this latter obstruction with a small sound, but was unable to again do so on subsequent examination. He then left off these attempts and confined his treatment to the first stricture and the urethritis which he treated by means of dilatation with sounds, irrigations and injections. About this time the patient decided to come back to the U. S. He was told at that time a sound size 20F was being used and the urethritis was practically cleared up.

He reported to me April 15, 1923, at which time he had a morning drop negative on examination for gonococci. Complained of frequency during the day but no discomfort during the night. He had no difficulty in starting the stream which was at first full and free but soon seemed to cut itself off part way until there was only about a half stream which continued until the end of the urinary act when there was some dribbling. Although there was frequency there was no urgency and he could retain his urine for hours.

Endoscopic examination showed numerous chronically inflamed Littre's glands and a resilient, moderately indurated, annular stricture of the irregular variety at the bulbo-membranous junction which would not admit passing the endoscope size 22F. A number 20F. sound was passed fairly easily. Both sounds met an impassable obstruction about one and one-half inches back of this stricture. Dilatation of the stricture was carried up to size 32F, and the chronically inflamed Littre's glands cleared up on

the usual irrigations and injections which followed these dilatations. The prostate was normal in size and consistency.

Second endoscopic examination May 12, 1923, showed urethra to be in good condition and the stricture to have been practically obliterated, the verumontanum showed moderate enlargement and bled quite freely. The bleeding was easily controlled by a topical application of 10% silver nitrate and the endoscopic was inserted on back until obstructed as the sounds had previously been.

Examination through the endoscope showed it to be against an obstruction in the mid-prostatic urethra, which obstruction was valvular in type formed by two mucous folds, which ballooned up when a little air pressure was exerted, therefore accounting for the urinary stream changing from a full to half stream stream after a good start.

The concave surfaces were anterior and therefore did not fill with the urinary stream which in reality opened them wider pushing them outward laterally against the urethral walls. The anterior stricture which was, at first size 20F, would permit the passage of fairly full urinary stream but produced enough obstruction to the flow of urine to cause a ballooning up of the membranous urethra and a back pressure on the valve flaps forming the congenital stricture in the mid-prostatic urethra, producing a partial closure of this valve like structure and therefore cutting down the size of the stream. We, therefore, have what might be termed a vicious circle. This symptom cleared up entirely as soon as the anterior stricture was completely dilated although no treatment had been given to the posterior stricture. This is certainly quite conclusive proof that the posterior or valve like congenital stircture could have existed all his life without symptoms had he not acquired another condition which aggravated it; namely, the stircture anterior to it.

Although, I had formerly been unable to pass this structure with anything, even a filiform, I was now able to pass a filiform into it easily with the aid of the endoscope, and by starting the filiform guide to a Le Forts sound, then withdrawing the endoscope and attaching the sound, I was enabled to pass a size 20F Le Fort's metal sound without much difficulty. A few days following this, attempts to pass sounds of various sizes failed but by means of the endoscope I very easily repeated the above procedure.

Although this structure was not now giving him trouble I felt that it should be done away with as a recurrence of the acquired stricture would again produce the above condition. I passed a size 22F endoscope up to the structure, made a topical application of 10% cocaine solution, inserted a straight urethrotome blade which I passed into the valvular structure and made an incision into each valvular flap. The bleeding was only moderate and a size 24F sound was passed into bladder with very little difficulty. The size was rapidly increased to a No. 30F, and continued until healed. He was advised to continue use of sounds once each month.

Cystoscopy (Fig. 1)

A No. 24 cystoscope passed without difficulty. No residual urine. Bladder capacity normal. Normal fundus. Normal ureteral orifices except that they are found nearer to the vesical neck than usual and are very widely separated giving the appearance of being up on the side of the bladder. There is an opening of a false passage anteriorly a short distance above the vesicle neck. Prostrate normal. Remnants of the valve flaps mentioned above are seen and appear as a small ridge on each lateral urethral wall just back of the verumontanum. The urethral opening of the above mentioned false passage is seen just anterior to the upper ends of these two ridges. The verumontanum is irregular in outline but gives no definite evidence that it may have been attached to the roof of the urethra as is sometimes found in these cases. The utricle shows evidence of chronic inflammation. At the bulbomembranous junction there is found the remaining evidence of the acquired stricture described above.

PROGRESS IN NEUROLOGY. Among the diagnostic methods used in neurology, the procedure advocated by Sicard of injecting lipiodol (54% solution of metallic iodine in poppy oil), in the diagnosis of cord tumors is a very interesting advance in neurologic diagnosis. The preferable route of injection is into the cisterna. No spinal fluid is removed for a week preceding the injection. The deep tissues leading to the ligament are anesthetized with novocain; after being sure that needle is in the cisterna, 1½ cc. of lipiodol is injected, making sure that the lipiodol is transparent and not brown and that no air is injected. No spinal fluid is removed. Immediately after injection patient is seated and the verebral segments just below the injection are percussed vigorously with the finger to help the downward passage of the lipiodol. Patient should be kept seated for 3 or 4 hours. Radiographs are made from one to four hours after injection, with the patient horizonital during the exposures. They should be taken at intervals during the next two or three days to note changes in the lipiodol image. Arrest of the lipiodol indicates obstruction in the canal; generally the arrest will be total and abrupt.

Ayer and Mixter have used the method on animals and advise caution in its use, saying that it should be reserved for cases where other clinical and laboratory methods are insufficient.

Progress in Neurology. Abraham Myerson, Boston, Mass. Boston Med. and Surg. Jour., June 11, 1925, p. 1165.

THE THERAPEUTIC ACTION OF ANILINE DYES ESPECIALLY IN INFECTIOUS DISEASES

PAUL GALLAGHER, M. D.
EL PASO, TEXAS

A glance at the medical literature of the past eight or ten years will show that the use of aniline dyes, in the struggle against diseases caused by bacteria and other microorganisms, is becoming more and more a question of practical therapeutics. Although the sanguine hopes entertained by the first investigators were not immediately fulfilled, yet this is no reason why this mode of treatment should fall into disuse. It is rather a reason why, owing to the fundamental soundness of this mode of therapy, we should make further investigations, both experimental and clinical, to find out how to overcome the apparent difficulties and insure success in the use of dyes.

For nearly forty years past it has been known that certain of the coal tar or aniline dyes had a deleterious effect on the growth of micro-organisms. Razsahegyi[1], in 1887, seems to have been the first to point out that these dyes were capable of a harmful effect on some bacteria. He embodied the dyes in nutrient gelatine and inoculated the tubes with bacteria.

This preliminary work appears to have passed unnoticed although Stilling[2], whose investigations were published a few years later, states that Kremianski, a Russian, advocated aniline inhalation in phthisis on account of its bactericidal properties.

THE GENERAL EFFECT OF DYES

Two important contributions were added to the literature in 1890. Penzoldt[3] found that certain aniline dyes, methylviolet, malachite green, etc., in aqueous solutions, could kill staphylococci and that certain other dyes could completely or partly inhibit their development.

Stilling's[2] work was much wider and in a general way established that some dyes, if in sufficient concentration, could effectively prevent the development of practically all the different bacteria. Stilling's experimental work was extended to clinical applications and from his findings he enthusiastically recommended that the dyes could be used as antiseptics in eye affections and in minor surgical and other infections.

This early work showed that the dyes could have both a bactericidal effect and a bacteriostatic effect; that is, that they could inhibit the growth of microbes.

Although Drigalski and Conradi[4], in 1892, had demonstrated in particular instances that the dye crystal violet exerted a selective bactericidal effect, the systematic study of selective dye action may be said to have originated in the United States with Churchman, [5-6], who worked especially with gentian violet, which was typical of a certain class of chemical dyes, studying its effects on various classes of bacteria and individual strains of different types. He was thus able to divide bacteria into two general groups according to the bacteriostatic effects of the dye, i. e., those which were gentian-violet positive and those which were violet negative. He found also that there was marked parallelism between Gram-staining and violet bacteriostatic effects. Thus of 130 species of bacteria studied Churchman found that 77 were Gram-positive and 53 Gram-negative.

Seventy or 90 per cent of the Gram-positive bacteria were also violet-positive and of the Gram-negative only 15 per cent were violet positive. In Churchman's opinon gentian violet differentiation of bacteria was more delicate and more accurate than Gram-stain differentiation. Gentian violet acted in precisely the same way toward bacteria whether the organisms had been stained with it before being planted on agar or if the dye was present in the media on which the bacteria were planted unstained.

When bacteria were exposed to gentian violet and planted upon plain agar all the commoner Gram-negative organisms grew while all the commoner Gram-positive, spore-bearing, aerobes were killed. What is true of gentian violet is also true, in greater or lesser degree, of other so-called basic aniline dyes of the triphenyl-methane group; it makes no difference, as regards results, whether the organisms are stained with the dye before being planted on the agar or if the dye is present in the media on which the organisms are planted unstained.

Mercurochrome does not belong to the triphenyl-methane group. It is purely a disinfecting dye; the mercury is incorporated into the body of the molecule in direct combination with the phenol or benzine ring.

It was assumed that the bacteriostatic or growth inhibition effect of dyes was always parallel with bactericidal effect; i. e., that

Read by title before the New Mexico Medical Society, at Clovis, N. M. in May, 1925.

if a chemical is found to prevent the growth of a bacterial species it was taken for granted that it would kill the organism. But while this was true of the basic dye group of which gentian violet was the prototype, Churchman found that it was not true of the acid dye fuchsin, the bacteriostatic and bactericidal power of which do not run parallel. Fuschsin kills Gram-negative bacteria when they are exposed to it, thus having a reverse selective bacteriostatic action as compared with gentian violet; but when fuchsin is added to the culture media on which the bacteria are planted, it acts just the same as gentian violet. A substance therefore which kills an organism when directly added to it may have little or no power to inhibit its growth when present in the environment in which it is growing.

In view of the experimental work of Hirschfelder, Malmgren and Creavey[8], it is questionable whether mercurochrome, acriflavin, or gentian violet could influence the course of local or general infections to any very great extent. They have shown in their experimental work on rabbits that the diffusion of these drugs into edematous tissues is so slight, when given in therapeutic doses, as to have practically no bacteridal or bacteriostatic propeerties.

Simon and Wood[9] studied the relation of chemical constitution of dyes to their inhibitory power and found that acid dyes had but little bacteriostatic power as compared with basic dyes.

Many other investigations have been made, especially as regards particular dyes or special types of organisms. Thus Krumwiede and Pratt[10] found that the streptococcus-pneumococcus groups were more resistant to dyes than other Gram-positive bacteria and Norton and Davis[11] that the streptococcus viridans and pneumococcus groups are inhibited equally by dyes and cannot be differentiated in cultures by this means.

We may sum up this part of the subject by saying that certain of the aniline dyes inhibit the growth of micro-organisms or kill them. Some dyes possess these powers more markedly than others and some are known to have a selective affinity for action on certain specific microorganisms.

The dyes acriflavine, methylene blue, Bengal rose, Victoria yellow, are active against the pneumococcus; brilliant green, gentian violet, malachite green, methyl violet are powerful anti-staphylococcal agents; these as well as victoria yellow are also equally effective against the streptococcus; brilliant green, hoffman violet, malachite green, etc., act against the gonococcus.

THE MODE OF ACTION OF DYES ON BACTERIA

Different explanations are given by different authors regarding the methods by which dye stuffs exercise an influence on bacterial growth and life. Originally these substances were used as local disinfectants, especially in eye infections; the action was then believed to be purely a mechanical one. It is now known, as the result of investigation, that the action is a chemical one. The bactericidal and bacteriostatic power of aniline dyes is a function of the chemical structure proper to each dye and very many of the known dyes have no bactericidal power as far as is known.

Thus Simon and Wood find that inhibitory action upon the growth of certain types of bacteria was a property common to all the tri-amino-triphenyl-methanes, but was not a property exclusively belonging to this group of chemicals but was also strongly manifested by other basic dyes, depending upon the presence of basic auxochromic groups and the absence of corresponding acid groups. While the basic dyes, generally speaking, possess a stronger bacteriostatic and bactericidal power than acid dyes, yet in particular cases these powers are marked in acid dyes. Thus the three dyes most effective against the pneumococcus are acid dyes. The presence or absence of certain groups in the molecular chemical constitution of the dye, as just mentioned, is considered to determine the electivity of the dye for bacteria. As a general rule, it may be considered that such groups are absent in the molecular construction of the acid dyes.

It is held by some, such as Gay and Beckwith[12] that the greater permeability of certain bacteria is a reason why they are acted upon more rapidly and more effectively by dyes than others. Thus Churchman, Eisenberg, Kolmer and others have shown that Gram-positive bacteria are more rapidly killed or inhibited by dyes than Gram-negative, permeability to Gram stain being an indication that they are very permeable to dyes.

Simon and Wood[9] explain the mode of action as follows: When organisms are first placed in the colored solutions the dye is deposited in the intercellular spaces of the covering membrane, which is thereby stained. Even without supposing that any chemical action takes place the mere occlusion of these spaces alone would suffice to affect more or less seriously the metabolism of the cell and would thus have a serious inhibitory effect upon the growth of the cell if it did not cause death. But in greater concentration of the dye or on

longer exposure of the germs to it, it may be supposed that some of the dye would penetrate into the cell itself and reach its protoplasm, leading to death by interference with intracellular metabolism. Whether such intracellular action is chemical or not cannot be definitely stated.

Churchman[9] considered that gentian violet could exert its influence on bacteria through the blood stream. This view has been accentuated by Browning, Cohen and Gulbransen[10], who claim to have shown experimentally that the dye substance—acriflavine—endows animal blood with bactericidal properties. The action is effected through the serum and these writers have also found by experiments in vitro that the addition of blood serum to dye solutions in some cases inhibited and in other increased the bacteriostatic or bactericidal effects of the dyes.

Burke and Grieves[11] have demonstrated that the bacteriotropic action of crystal violet, methyl-violet, gentian violet, brilliant green, basic fuchsin, the flavins, and malachite green, are all materially increased by increasing the alkalinity of the body fluids. This can be done by the administration of alkalies by mouth, or their local use when the dye is to be applied locally. Controlling the hydrogen-ion concentration of the body fluids, they show at times to be of use in checking the growth of certain bacteria. There are few exceptions.

Saxl and Scherf[12] have demonstrated that in the presence of complete achylia, dyes are not excreted into the stomach and that only the lipoid solution dyes are so excreted.

THE THERAPEUTIC APPLICATIONS OF DYES

The indications for the employment of dye therapy is given by fungoid, protozoan and bacterial diseases. It is not very long ago since such morbid conditions were treated symptomatically alone because there were no known means of reaching the cause of the disease at its root; but it is one of the glories of modern medical science that it employs experimental methods in the development of new remedies for infections or other diseases in contrast with the empiric remedies that characterized the pre-laboratory days. Sydenham was one of the first to refer to the value of Peruvian bark as a specific remedy acting directly on diseased tissues. It was a long stretch from Sydenham to Pasteur and Koch, the former demonstrating that most infectious diseases were due to micro-organisms and the the latter showing the specificity of different microbes and their etiological significance for the development of infective diseases. But the great value of these discoveries was that they pointed to a way in which the cause of infective disease might be directly reached and attacked. The great desideratum in modern drug therapy of microbic disease is to find remedies which sterilize the body after its invasion by microbes but which do not damage the organic tissues. Ehrlich was the great pioneer in this field, building up synthetic chemical drugs with the foregoing object in view. Ehrlich's successful work in the chemotherapy of trypanosomiasis by a dye, trypan red, and of syphilis by means of arsenic compounds is well known.

Ehrlich's work was principally directed against protozoa, but his followers all over the world have applied his methods to infective diseases due to moulds, fungi and bacteria. Schamberg and Kolmer[13], after extensive investigation, have found that brilliant green among the dyes was the best restrainer of growth of superficial molds and fungi but that as a fungicide crystal violet was superior. They considered that crystal violet has a stronger effect than iodine which is most extensively used as a skin disinfectant in surgery

Practical results in the treatment of bacterial diseases by means of dyes have been obtained up to the present only within narrow limits, but the more recent reports indicate favorable action upon localized infections where the dye material can be properly applied.

The late war gave an opportunity for the extensive use of dyes in the treatment of infected wounds. Baumann[14] reported good results from the use of methyl violet. Hoffmann[15] used an aqueous solution mixture of dyes especially directed against streptococcic and staphylococcic infections. Hoffmann remarked that dyes had not the same corroding effects on the tissues as ordinary antiseptics and, therefore, that they are to be preferred in the treatment of infected wounds as they do not produce necrosis nor, consequently, an abiding place for fresh colonies of bacteria. This property of being non-irritating is of most particular value in local injuries accompanied by maceration and eczema due to secretions. The application of dyes rapidly brings about dessication and disappearance of all irritation phenomena. Dyes, especially brilliant green and the acidine compounds, were extensively used by the British Army during the war in the treatment of infected wounds: Massie[16], Drummond[17], Pitcher and Hull[18], and others have so reported.

Queyrat[19] has used dyes with good effects in chancroid. He employed a sterile

combination of fuchsin and methylene blue, 7 parts fuchsin to 3 parts of a 10 per cent aqueous solution of the blue. The mixture is applied on a saturated cotton to the chancre surface pressing it into the anfractuosities; the dressing is changed daily. A. J. and M. E. Greenberger[23] and Dorland[24] have used dyes against gonorrheal infections.

Meleny and Zau[25], in an extensive piece of experimental work on rabbits, have shown that the inhibitory action of neutral acriflavine within the body against hemolytic streptococci is almost nil even in lethal doses of the dye.

The first named authors treated 200 office cases of gonorrhea (126 acute and 74 chronic) with 1/4000 strength acriflavine solution in normal saline at a temperature from 35 to 40 degrees C.; the results obtained were distinctly more encouraging than with the use of the organic silver preparations or potassium permanganate in current use in the treatment of acute specific as well as non-specific urethritis.

Infections localized about the eyes were almost the first to which dye therapy was applied. Excellent results from dyes, either singly or in combination, the latter being employed in rebellious cases, have been reported by Loehlein[26] and others.

Wohlgemuth[27], of the Rudolph Virchow Hospital, Berlin, treated a case of typhoid osteomyelitis with dyes. This case was treated first by methyl violet alone with failure. The addition of fuchsin immediately caused the disappearance of the Eberth bacillus, which result was definite. Hoffmann[28] also states that the effects of dyes in acute and old standing osteomyelitis is very favorable.

Hoffmann in some cases of spina ventosa, after as complete excision as possible of the diseased tissue, tamponed the cavity with gauze imbibed with dye solution, leaving the tampon in place for three weeks. On removing the tampon, the surface of the cavity was granulated clearly without secretions and completely closed after a short time, while before the use of dye, Hoffmann had always observed operation for spina ventosa followed by abundant suppuration. Nor did the soft parts in the vicinity suffer in any way from contact with the dye.

F. McKelvey Bell[29], in writing of 122 cases, including bronchitis, whooping caugh, bronchial pneumonia, Ludwig's angina, erysipelas, etc., treated with neutral acriflavine, concludes that the acute conditions showed satisfactory response, while chronic conditions were much less tractable.

Major[30] reports one case of subacute infective endocarditis promptly relieved by the intravenous use of gentian violet.

Goldberg[31], after some experience, has arrived at the conclusion that intraspinal, intracisternal, or intraventricular use of gentian violet in a solution of 1:250,000 is not irritating and may be of decisive benefit in treating meningitis caused by the common Gram-positive organisms. He advises frequent drainage, followed by such injections.

Mosser and Monroe[32], of Mexico City, report 8 cases of systemic infection, suspected Gram-positive infections, treated with 10 or 15 cc of a one per cent solution of gentian violet. They report such good effects as to warrant the belief that it may be a therapeutic measure of great value.

Other minor surgical uses to which the dyes are applicable are leg ulcers, burns which are not extensive, bed sores, and in fact any inflammatory condition in which the region can easily be reached by the dye solutions.

In pre-operative treatment of prostatic patientts, lavage of the bladder with a weak dye solution causes cystic inflammation, if present, to recede.

Furunculosis, abscesses, phlegmons, acne, anthrax, and localized mycotic infections are indications for the use of dyes.

Up to the present time only slight progress has been made in the application of dye therapy to the treatment of infective processes in closed cavities. However, Churchman[33], has reported favorable results from the use of gentian violet in bone and joint infections; Waters[34] in tuberculous empyema; and Major[35] in streptococcal empyema.

The same remark applies to the internal application of dye therapy in generalized infections. Here, in addition to the difficulty of reaching the focus of infection, there is the fact that the dye is likely to be chemically reduced within the body and thus lose much if not all of its bactericidal effects. Moreover, dyes or their reduced products may be toxic for the host.

Meleney and Zau[36] have shown in their rabbit work that acriflavine has a selective action on certain body tissues, particularly the kidney and liver. They may take up the dye in such concentrations as to seriously injure or even entirely destroy themselves.

In general, streptococci and staphylococci infections are more amenable to basic dye therapy than infections originated by the pneumococcus and colon bacillus. In time, however, it is hoped that better means of acting upon these microbes will be found.

As a general conclusion it may be said

that while theoretically aniline dyes are specific agents capable of overcoming the cause of infective processes, the difficulty in practice is to bring the dyes into direct contact with these causes. Currently, the dyes are found efficacious in localized infections, but as clinical experience multiplies there is reason to believe that the use of dyes will also be found effective in generalized and deep seated infections.

BIBLIOGRAPHY

1. Rozsahegyi: Centralbl. f. Bact., 1887, ii, Orig. 418.
2. Penzoldt: Arch. f. exper. Path. und Pharmak, 1890, xxvi.
3. Stilling: Anilinfarbstoffe as Anteseptica und ihre Anwendung in der Praxis," Strassburg, 1890.
4. Drigalski & Conradi: Zeitschr f. Hygiene, 1902, xxxix, 283.
5. Churchman: Jour. Exper.. Med. 1912, xvi, 221.
6. Churchman: Jour. Exper. Med. xxxvii, i.
7. Churchman: Journ. Urol., 1924, xi.
8. Hirschfelder, Malmgren and Creavy: Jour. of Pharmac. & Exper. Therap., 1924, xxiv, 459.
9. Simon & Wood: Amer. Jour. Med. Sci., 1914, clxvii, 247.
10. Krumwiede & Pratt: Jour. Exper. Med., 1914, xx, 501.
11. Norton & Davis: Jour. Infect. Dis., 1923, xxxii, 220.
12. Gay & Beckwith: Amer. Jour. Hygiene, 1922, ii, 467.
13. Browning, Cohen and Gulbransen: Brit. Med. Jour., 1922, i, 514.
14. Burke & Grieves: Amer. Jour. Med. Sci., 1924, clxviii, 98.
15. Saxl and Scherf: Wiener Mediz. Wchnschr., Sept. 20, 1923.
16. Schamberg & Kolmer: Arch. Dermat. & Syphilis, 1922, vi, 746.
17. Baumann: Muench. med. Wchnschr., 1923, lxx, 725.
18. Hoffman: Deut. Zeitschr. f. Chir., 1922,
19. Massie: Lancet, 1918, cxciv, 635.
20. Drummond & McNee: Lancet, 1917, cxciii, 640.
21. Pilcher & Hull: Brit. Med. Jour., 1918, i, 172.
22. Queyrat: Nouveau traitement des chancres Simples. Bull Soc. Franc. de dermat, 1921, No., 6, p. 288.
23. A. J. Greenberger & M. E. Greenberger: Urol & Cutan Rev., 1923, xxvii, 422.
24. Dorland: Medical Record, N. Y., xcviii, 268.
25. Meleney & Zau: Jour. Amer. Med. Assn., 1925, lxxxiv, p 337.
26. Loehlein: Therap. Halbmonatsschr., 1921, xxxv, 561.
27. Wohlgemuth: Berl. Klin. Wchnschr., 19 Sept. 1921.
28. F. McKelvey Bell: Med. Jour. & Record, N. Y., 1924, cxx, 437.
29. Major: Jour. Amer. Med. Assn., 1925, lxxxiv, 278.
30. Goldberg: Boston Med. & Surg. Jour., 1925, cxcii, 350.
31. Mooser & Monroe: Med. Jour. & Record, N. Y., 1924, cix, 52.
32. Churchman: Jour. Amer. Med. Assn., 1918, lxx, 1047.
33. Waters: Amer. Rev. Tuberc., 1921, iv, 875.
34. Major. Jour. Amer. Med. Assn., clxii, 397.

DRAINING ABDOMINAL WOUNDS

RAFAEL A. HERNANDEZ, M. D.
TUCSON, ARIZONA

All surgeons have experienced trouble in healing abdominal wounds, especially in fat patients, in whom drainage is used more frequently.

Whether to drain the incision or not is a question of opinion. There are those who believe that if the operation has been preformed aseptically, it is not necessary to drain the wound; but experience advises that drainage is as necessary in surgery as is asepsis. If we carefully bear in mind the anatomic structures pertaining to the operation, we have to accept that every incision has to be drained even when the operation is entirely clean.

In work on any of the abdominal viscera we can be sure that we have tied the blood vessels, but we never know to what extent we have injured the lymphatics, and if the wound is closed without drainage and the lymphatic vessels have been cut off, the lymph accumulates in the abdominal cavity. This happens easily; for instance, in the angle formed by the appendix and cecum, there is a chain of lymphatic glands; the same exists between the fallopian tubes and ovaries. Of course, the surgeon always has in consideration the lymphatics; but many, many times it occurs that there is a place which has been bleeding, the blood vessels are tied, but in a few minutes after there appears a new liquid, light red rose in color and the surgeon says, as I heard one say dogmatically: "Oh, that is alright, it is nothing but serum." But really in this case it was not serum but lymph, a splendid element in which to develop a fatal infection. Perhaps the operation was performed brilliantly, but it happened that twelve or fifteen hours after (two or three o'clock in the morning) the telephone rang. It was the nurse, who anxiously said, "Doctor, your patient is not very well." "What is the matter?" the doctor said. "I do not know Doctor, but you had better come at once." And the poor doctor who during the operation was splendidly referring to details of his technic, recommended by Doyen, Tuffier, Murphy, Ochsner, the Mayos, Moynihan and many other gifted masters, now was taking the patient's pulse, he was at the bedside smiling bitterly and talking sweetly,

telling the patient: "Oh, don't you worry Mrs. So and So, there is nothing but a little gas; you will be alright pretty soon." (In the morning it was nothing but serum; not it is nothing but a little gas); but he knew that the anxious expression of the patient, her rapid and irregular pulse, her distended and tympanitic abdomen all combined to tell him that the end of the patient was near.

Now the nurses rush frantically about, the doctor recommends an injection of pituitrin, then another of adrenalin, then strychnine, normal saline intramuscular, intravenously or by the rectum. He is in a great command of resources, with the principal idea of saving the patient's life, but nothing can be done to keep her living and she died from fulminant septicemia. Her power of resistance was too low. The offending toxic material was too virulent.

In chronic infections it is different; it often happens that in chronic salpingitis, chronic abscess of the liver and of the appendix, the patient is toxic for several days. He has a rapid pulse, fever between 100 and 102 especially in the afternoon; white tongue, a little albumin in the urine, constipation, loss of appetite, weakness and trembling hands. The condition is more dramatic than dangerous, because, with the infection also has developed autogenous bacterins which are a wonderful aid to the surgeon in combating the pathology of the case. Of course it is not necessary to say that all these cases have to be drained.

The above considerations relate to the abdominal cavity, but regarding the abdominal wall, drainage is more necessary on account of the following circumstances: If the fat of the abdominal wall is not protected during the operation, the mucleated fat vesicles will be destroyed or infected with the removed pathology, and three or four days after, a cloudy liquid will be discharged through the incision or stay stitches.

Another trouble very common is when the sutures of the abdominal muscles are drawn too tightly, the blood supply will be very poor if not cut off entirely. The consequence of this is partial gangrene of the muscles resulting in a purulent discharge or in the accumulation of serum. Also, during progress of suturing, the needle may puncture small blood vessels causing the formation of a hematoma, which separates the tissues, acting as a foreign body. In both cases even if there is not infection the patient is obliged to keep in bed twenty or more days longer, until the wound has entirely discharged, and the partially destroyed tissues are reconstructed. But as a general rule the result of these cases is a postoperative hernia.

To avoid or reduce the above conditions it is well to bear in mind:

1. To protect with a wet towel the fat of the abdominal wall during the operation, using spring clips to hold the towel above the skin and below the internal fascia.

2. To drain clean wounds for twenty-four hours with soft rubber tubes without gauze. The hard drainage tubes may perforate the intestine and the gauze may carry infection to the peritoneum.

3. To keep in mind that the sutures on the abdominal muscles must not be too tightly drawn, for if the blood supply is poor or interrupted, the consequence will be either infection or delay in healing the incision.

4. Not to fail to drain with very soft rubber catheter for 24 hours the abdominal muscles between the internal and external fascias.

5. To use boilable catgut internally and dermally for stay stitches and closing the incision.

6. If, for any reason, the stay stitches have to be removed before the regular period of time, always protect the union of the incision with small ribbons of surgical adhesive plaster, keeping them in place for ten or twenty days, until the abdominal wall is sufficiently strong, then there will be no separation of tissues.

GASTRIC CARCINOMA. A review of 2000 gastric complaints in this clinic has shown the upper abdominal organic lesions responsible for these complaints to be about in the following ratio: Gastric ulcer 1, gastric cancer 2, duodenal ulcer 6, gallbladder disease 12. Eusterman agrees that this ratio is about correct, except the incidence of cancer is higher at the Mayo Clinic, due probably to the large number of hopeless cancer cases who go there as a last resort.

In the 58 patients with gastric cancer, a presumptive diagnosis was made by the roentgenologist and clinician on 57 patients. The radiologist cannot differentiate between lues and gastric carcinoma as a rule, nor can he differentiate uniformly simple ulcer from malignant degeneration of ulcer. The expert radiologist will recognize 98 percent of carcinomatous stomachs as showing organic pathology, and the clinician must supplement these findings by other means.

This exact radiologist diagnosis is highly technical, requires large experience, has many pitfalls to the occasional operator, and requires combined fluoroscopic and radiographic procedures. A positive diagnosis of carcinoma of the stomach is made fairly frequently by unskilled radiologists, when such a lesion is not present.

Gastrica Carcinoma. John Minor Blackford, M. D., Seattle, Wash. Northwest Med., June, 1925, p 280.

Southwestern Medicine

Printed by THE A C TAYLOR PRINTING CO, Phoenix, Arizona
Published monthly for the Board of Managers of the four constituent societies.

VOLUME IX | SEPTEMBER, 1925 | No. 9

EDITORIAL STAFF

DR. WARNER WATKINS, Box 1328, Phoenix, Arizona ..... Editor in Chief
DR. HARRY H. VARNER, Mills Building, El Paso, Texas ..... Associate Editor
DR. C. M. YATER, Roswell, New Mexico ..... Associate Editor

BOARD OF MANAGERS

ARIZONA STATE MEDICAL ASSOCIATION

DR. D. F. HARBRIDGE ..... Phoenix
DR. C. E. YOUNT ..... Prescott

EL PASO COUNTY MEDICAL SOCIETY

DR. JAMES VANCE (Chairman) ..... El Paso
DR. H. H. STARK ..... El Paso

NEW MEXICO STATE MEDICAL SOCIETY

DR. C. F. BEESON ..... Roswel
DR. H. A. MILLER ..... Clovis

MEDICAL & SURGICAL ASSOCIATION OF THE SOUTHWEST

DR. H. H. STARK ..... El Paso
DR. W. WARNER WATKINS ..... Phoenix

WE ARE LATE

This issue of SOUTHWESTERN MEDICINE is unavoidably delayed, owing to conditions which could not be set aside. It is expected that the October issue will be a few days late also. The October issue will carry the program of the Southwestern meeting in El Paso and will be held up a few days in order to carry this program.

THE SOUTHWEST MEETING, EL PASO, November 5th, 6th and 7th.

The dates selected for the annual meeting of the Medical & Surgical Association of the Southwest, to be held in El Paso, are November 5th, 6th and 7th. Our meeting this year will be very advantageously placed just preceding the Southern Medical Association, to be held in Dallas, November 9th to 12th. Perhaps many of our members will attend the Southern Association's meeting, and we will undoubtedly be favored with several distinguished visitors stopping over in El Paso enroute to Dallas.

Dr. Willis W. Waite, First National Bank Bldg., El Paso, is chairman of the Program Committee, and will have the completed program ready for the October issue of this journal.

Dr. J. R. Van Atta, of Albuquerque is in charge of the New Mexico portion of the program and Dr. Orville H. Brown, of Phoenix, has charge of the Arizona representation. Dr. Watson, of Tucson, originally appointed from Arizona, will be out of the state continuously until after the meeting and could not serve. Any member of the Association living in New Mexico who desires to present a paper before the meeting in El Paso should communicate at once with Dr. Van Atta, and any member living in Arizona who desires a place on the program should communicate with Dr. Orville Harry Brown of Phoenix.

The Local Committee on Clinics will be composed of the following: Dr. Felix P. Miller, Surgery; Dr. Orville Egbert, Tuberculosis; Dr. E. A. Duncan Internal Medicine; Dr. Harry Leigh, Pediatrics; Dr. J. N. Britton, Eye, Ear, Nose and Throat.

Watch the October issue of SOUTHWESTERN MEDICINE for details of the scientific and clinical programs.

FREDERICK J. NORDBY

The medical profession of New Mexico and the members of the Medical and Surgical Association of the Southwest were shocked by the sudden and wholly unexpected death of Dr. Frederick J. Nordby, Surgical Chief of the U. S. Veterans' Hospital, at Ford Bayard, N. M.

Dr. Nordby's fine papers before the last two meetings of the Southwest Association were features of those meetings, indicating a very high class of surgical work.

Dr. Nordby was only 36 years old, having graduated from the University of Colorado in 1913, and his untimely death removed a very promising figure from he medical circles of New Mexico. The cause of death, so far as meagre reports would indicate, was some acute cardiac attack.

WILLIAM A. BRISTOL

Word is received of the death, on August first, of Dr. William A. Bristol, of Clayton, N. M., the cause of death being angina pectoris.

Dr. Bristol was the president of Union County Medical Society, and was sixty six years of age. He was a graduate of the Louisville Medical College, class oof 1893, and was licensed in New Mexico in 1912.

PUBLIC HEALTH IN NEW MEXICO

The Weekly Bulletin of the Bureau of Public Health of New Mexico recently indulged in a retrospective review of the accomplishments of that department during the past six years.

Many physicians of the Southwest can recall the time, prior to the establishment of the present Bureau in New Mexico, when that state was considered to be at the bottom of the list in public health enlightenment. Although, as the Bulletin recalls, several earnest and determined members of the profession were doing all possible to remedy matters, no marked improvement took place until the establishment of the present efficient and comprehensive Bureau of Public Health, with its full time officials. After recalling past conditions, the Bulletin says:—

In contrast to these early conditions the present outlook is encouraging. Then, the local health officers had no experience in modern public health practices, which necessitated constant travel over the state by members of the Department to take control of menacing situations and instruct the health officers in their duties. Now, we are seldom called upon for such service. Then, there was not an experienced, trained health officer in the state. Now, we have eight counties employing such men on a full-time basis and, last year, ten counties had this service. Then, smallpox and diphtheria were rampant everywhere. Now, smallpox is a curiosity and diphtheria is rapidly receding before the application of preventive measures. Then, only three public health nurses had ever been employed in the State. Now, there are fifteen at work. Then, there was no organized health work in the schools. This year, a complete program of health education will be introduced into every high school, as the beginning of a larger plan. Formerly, city and industrial water supplies were without trained supervision. Now, every public supply is regularly inspected by a sanitary engineer and tested in the laboratory. Indeed, there was no laboratory for public health purposes, until our own was established; prior to that dependence had to be placed on private laboratories and the regular fees were charged. Until October, 1919, there had been no statewide registration of births and deaths nor any compilation of vital statistics. Now, over 80 per cent of birth and deaths are recorded in the central office and a beginning has been made in a statistical study of them. Since the commencement of this period, the Rockfeller Foundation has spent over $40,000 in the state, on health activities, and the federal government has contributed nearly $70,000.

All of this is recalled, not to laud any individual nor any one portion of the sanitary organization of the state, but to place in clearer relief the fact that our people as a whole are developing a broader social outlook; that they are cooperating to make this state a happier and more inviting place in which to live.

Illustrating the type of work done by the full time County Health Officers in New Mexico, the following report of the recently appointed full-time officer of Eddy County is given in a recent Bulletin, and contains so many obvious lessons for county health officials, that it is given in full here:—

"As stated in the report for last month the Health Officer decided to carry out inspections of all food handling establishments—including barber shops—in the county. Food handling places and barber shops in Carlsbad, Artesia, Hope, Loving and Oil City were inspected during the month as follows: Carlsbad, 34; Artesia 9; Loving 6; Oil City 5; Hope 2; total 66. Divided as follows—Groceries 8; Restaurants 19; Barber shops 10. Bakeries 6; Meat shops 8; Soda fountains 9; Cold drink establishments 4; Ice plants 1; Bottling works 1; total 66. This does not include 6 dairies of which five were scored. In the above list 220 persons are handling food and drink and 22 are employed in handling milk.

"Of the 22 dairy people 12 have been examined for carriers and 12 Health Certificates issued. Fecal specimens will continue to be examined until all are covered and Health Certificates issued. All barbers in Carlsbad (15) have had a physical examination and Health Certificates issued.

"in all above places there remain to be examined; Carslbad—dairy 1; meat markets 1; small barbershops 2. Artesia—Ice cream factory 2; dairy 1.

"There remain now to be inspected only the small villages of Dayton, Lakewood, Malaga and Otis. It might be noted that the 242 food handlers and barbers were all given a superficial physical examination but Health Certificates are being issued only on more careful examination.

"The Spanish First Aid Classes are still being held weekly at Loving with a good attendance. The sewing class for the Spanish girls is still functioning with an attendance of from 15 to 20 each week. It is regretted that it may be necessary to temporarily discontinue the First Aid Classes as with the advent of the opening of the schools and some 2500 children to be examined it will take the Health Officer and staff some weeks of steady work to finish these examinations.

"Of the 7 Typhoid Fever cases reported and investigated by the Health Officer 3 were ruled out as Typhoid Fever and of the remaining 4 it was definitely established that the infection did not take place in Eddy Co. in 2 cases.

"The Clean Up Day proclaimed by the Mayor of Carlsbad for August 13 was an unqualified success and tons of rubbish that had accumulated were removed from houses and lots.

"In September of each year some 1200 to 1500 Mexican laborers are imported from the border to work in the cotton fields around Loving. The Health Officer is trying to have the employers of this labor demand that each man have a health certificate before he leaves the border or if it is impracticable to do this, to at least have each man examined for communicable diseases as soon as he arrives at Loving. The County Commissioners

have taken the matter up and it is hoped that the employers will co-operate in this work and thereby avoid the introduction of communicable diseases into the community.

"As soon as practicable it is contemplated to establish in the village of San Jose, near Carlsbad, an English night school for the benefit of those Mexicans whose employment does not allow them to attend school during the day. The primary purpose of this school is to teach English and general Americanization. Incidentally talks on hygiene and sanitation will be given as opportunity offers.

TULANE UNIVERSITY POSTGRADUATE SCHOOL

Elsewhere in this issue appears the announcement of the Graduate School of Medicine of Tulane University at New Orleans.

For many reasons this school should attract the medical men of the Southwest who are seeking postgraduate work. One of the chief of these is the wealth of material in diseases peculiar to warm climates; these conditions are frequently encountered in the southwest and are not always adequately understood or properly handled. The location of New Orleans as a seaport in a sub-tropical location gives it a peculiar advantage in teaching and demonstrating warm climate diseases.

Tulane University Graduate School of Medicine gives very attractive courses of six weeks in any one of the five following departments: Medicine, Surgery, Obstetrics and Gynecology, Special Senses, Laboratory. The division is a very excellent one for the general practioner who wishes a fairly comprehensive review of his field. For example the medical man is taught not only general medicine, but gastro-enterology, pediatrice, tropical medicine, dermatology, nervous system diseases and phthisiology, with opportunity to see clinical demonstration oc cases in all these classes. The laboratory course covers clinical laboratory diagnosis, pathology and radiology, a very desirable combination. The institutions used for clinical demonstration are The Hutchinson Memorial, Charity Hospital, Eye, Ear, Nose and Throat Hospital, City Hospital and Touro Infirmary.

COCHISE COUNTY (ARIZ.) MEDICAL SOCIETY

JUNE MEETING

The Cochise County Medical Society met in regular session at City Hall, Bisbee, on June 6, 1925, 8:30 p. m.

Members present: Drs. Reese, Durfee, Cruthirds, Wright, Causey and Cook.

The meeting was called to order by the president, Dr. Causey.

On account of small attendance it was decided not to have the program.

Dr. Reese who was to have read a paper on obstetrical observations submitted same.

After voting to discontinue meetings during the summer months the society adjourned.

H. A. Reese, Acting Secretary.

"Particular Prescriptionists"

Distributors for

Parke, Davis & Co's.

BIOLOGICALS and AMPOULES

Sufficient Stock for All Emergencies

Fresh Stock of

Rabies Treatment

Cumming Method

Manufactured by

Parke, Davis & Co.

On Hand at All Times

Mail, Telephone and Telegraph Orders Given Immediate Attention

Wayland's Central Pharmacy

Goodrich Block

PHOENIX, ARIZONA

St. Joseph's Hospital

Phoenix, Arizona

Accredited Class A General Hospital of 125 beds.

Open Staff Organization.

SURGICAL:—The Surgical Department consists of three major and two specialist operating rooms, with anesthetic and all accessory rooms. It is completely equipped with every surgical convenience; nitrous oxide and ethylene gas apparatus.

OBSTETRICAL:—The Obstetrical Department is in the Annex, and has its own operating and delivery rooms, with all accessory equipment for any type of emergency obstetrical work.

LABORATORY:—Under direction of a competent pathologist; immediate frozen sections and diagnosis, when desired. All blood, serological and chemical examinations promptly performed by competent technicians under direct supervision of the pathologist.

X-RAY AND RADIUM:—Fluoroscopic and radiographic work by competent radiologist. Urological department adjacent to x-ray room for prompt pyelographic work. High voltage x-ray equipment for preoperative and post-operative therapy. Radium available for cases requiring this treatment.

BASAL METABOLISM:—This work is in charge of a competent metabolist and can be done at bedside or in metabolism room.

DIETARY:—A trained dietician working in conjunction with the clinical laboratory makes possible the accurate study of patients whose diets need to be adjusted, particularly diabetics who require the determination of carbohydrate tolerance and insulin requirements.

Any physician or surgeon in the Southwest, who cannot accompany patients to Phoenix, is invited to refer them direct to the Hospital. They will be placed in charge of ethical members of the Staff.

In Charge of

SISTERS OF MERCY

COCHISE COUNTY (ARIZ.) MEDICAL SOCIETY

SEPTEMBER MEETING

The Cochise County Medical Society held its first regular meeting after the summer vacation at the City Hall in Dougas, Sept. 5, 1925.

There were present Drs. Causey, Wright, Durfee, Hawley, Cook, Bledsoe, Tuttle, Cruthirds, Bridge and Lund.

The minutes of the meeting of June 6th, 1925 were corrected and approved.

The application for membership of Dr. Willis P. Baker of Fort Huachuca which had been reported favorably by Drs. Bridge and Reese of the Board of Censors was favorably considered and Dr. Baker was elected to membership in the society.

A communication from the A. M. A. concerning auto emblem with the name of the county society on the emblem was by motion laid on the table.

The treasurer acknowledged the receipt of $1.26 from the committee in charge of the State Medical Association meeting. This represented the balance left in their hands after expenses were paid.

It was moved and carried that a vote of thanks of the society be extended to the committee in charge of the state meet for their successful work in putting on the state meet.

Dr. Cook of Douglas presented a paper on "The Deaf." Dr. Cook stated that deafness was of two types, conductive and perceptive. The latter group comprises the greater number of cases. The Eustachian tube is the port of entry of all inflammatory conditions of the middle ear barring those of traumatic origin. The large proportion of conductive deafness is due to immobilization of the stapes in the oval window. The fixation of this bone is the result of an inflammatory process or of a true ankylosis in osteosclerosis of the ear bones. Perceptiv deafness may be due to lues. One of the important points of the paper is the fact that in most cases of deafness the patient comes to the ear man after the damage is done. The most that can be hoped for is an arrest of the condition. The essential thing in treating deafness is to remedy as they arise the conditions which later in life will produce the deafness such as removal of adenoids and infected tonsils, the prompt treatment of sinus conditions and infections of the nasal passages.

Dr. Bridge reported a case of chorea complicating pregnancy. The patient at a previous time had one kidney removed. The urine was negative. The patient had the characteristic choreic twitchings. The case was a very aggravated one and her mental condition was becoming precarious. The case was so desperate that on consultation the pregnancy was interrupted. This resulted in the prompt improvement in a week's time and in two weeks she was up and about with but very little of the symptoms remaining.

Dr. Bledsoe reported a case of a man of 62 whose only symptom was the urinary findings of blood, tissue shreds and a few casts. The prostate was moderately enlarged The blood and shreds suggested malignancy. Cystoscopy demonstrated a carcinoma of the trigone of the bladder. Deep x-ray therapy resulted in relief from pain, the urine being almost free from microscopic blood.

Dr. Bledsoe also reported a case of pyelitis in a pregnant woman of 20. When first seen she had a high temperature and a dicrotic pulse. Her urine was full of pus. She complained of a deeply located pain in the region of the right kidney. Following the exhibition of urinary antiseptics and intravenous mercurochrome the patient showed marked improvement. She went to full term with no complications.

Dr. Lund reported a case of threatened eclampsia with blood pressure of 180, albumen and casts. The patient, a primipara of seven months gestation failed to go into labor 24 hours after introduction of a Barnes bag. Rupture of the membranes was then done and 48 hours later a second Barnes bag was introduced which after 40 hours produced complete dilatation. She then had an instrumental delivery and made an uneventful recovery.

Dr. Lund also reported a case of pyelitis in a 5 year old girl in which the use of hexyleresorcinol, neutral acriflavine, utropian, intravenous uritone and mercurochrome produced no results.

Dr. Bridge and Dr. Bledsoe briefly reported the existence of two cases of infantile paralysis in Bisbee. One of these had been in Los Angeles this summer.

Adjourned. Carl H. Lund, Sec'y.

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts Before You Purchase

WE MAY SAVE YOU FROM 10% TO 25% ON X-RAY LABORATORY COST

Among the Many Articles Sold Are

X-RAY FILM, Duplitized or Dental, Eastman, Superspeed or Agfa Film. Heavy discounts on standard package lots. X-Ograph, Eastman, Justrite and Rubber Rim Dental Film, fast or slow emulsion.

BRADY'S POTTER BUCKY DIAPHRAGM insures finest radiographs on heavy parts, such as kidney, spine, gallbladder or heads.
Curved Top Style—up to 17x17 size cassettes.....$250.00
Flat Top Style—holds up to 11x14 cassettes..... 175.00

BARIUM SULPHATE. For stomach work. Finest grade. Low price. Special price on 100-pound lots.

DEVELOPING TANKS, 4, 5 or 6 compartment stone, will end your dark room troubles. Ship from Chicago, Brooklyn, Boston or Virginia. Many sizes of enameled steel tanks.

DENTAL FILM MOUNTS. Black or gray cardboard with celluloid window or all celluloid type, one to fourteen film openings. Special list and samples on request. Either stock styles or imprinted with name, address, etc.

INTENSIFYING SCREENS—Patterson, T. E., or Buck X-Ograph Screens for fast exposure alone or mounted in Cassettes. Liberal discounts. All-metal cassettes. Several makes.

If you have a machine have us put your name on our mailing list.

GEO. W. BRADY & CO.
790 So. Western Ave., CHICAGO

MASONIC HOSPITAL (EL PASO, TEXAS)

Minutes of the Meeting of the Medical Staff Held at the Hospital, July 14, 1925.

Meeting was called to order at 8 p. m. by the chairman of the staff. Minutes of previous meeting were read and approved.

The application of Dr. Clark was read and it was recommended to the board of directors that Dr. Clark be appointed to the visiting staff.

Mr. Loomis of the board of directors appeared before the staff and stated that it was the wish of the board of directors that an out patient department be established in connection with the hospital. He stated that the board considered this would assist in their getting taxes refunded and the hospital exempt

from taxation in the future, at the same time render service to the community. The question was discussed by the staff and it was moved that the chairman appoint a committee of four, the chairman of the staff to be chairman of the committee to confer with the board and determine just what it wanted and form some definite plan of action. Motion was seconded. The chairman appointed Drs. Miller, Gambrell and Rogers.

Several interesting case reports were reviewed among which were a case of eclampsia by Dr. Cummins and a Cesarean section by Dr. Gambrell.

The following members of the staff were present: Drs. Miller, Stevenson, Rogers, Rawlings, Gambrell, Hugh White, Turner and Cummins.

Meeting adjourned at 10 p. m.

E. J. Cummins, Sec'y Medical Staff.

MASONIC HOSPITAL (EL PASO, TEXAS)

Minutes of the Meeting of the Medical Staff
Held at the Hospital, June 9, 1925.

The meeting was called to order at 8 p. m. by Dr. H. E. Stevenson, chairman of the staff.

Minutes of the previous meeting were read and approved.

Dr. Miller moved that the minutes show that May meeting was not held on account of National Hospital Day and that the staff attended the laying of the corner stone of the nurses' new home.

The Efficiency Committee reported that in the future it was the purpose of the committee to have the doctors present whose cases were to be reviewed whether the doctors belonged to the staff or the visiting staff.

The secretary reported that at an informal meeting of the members, Miss Manley was authorized to purchase presents for the members of the first graduation class. Dr. Rawlings moved that the informal action be ratified and the amount of the bill of $32.60 be prorated among the members of the staff. Motion was seconded by Dr. Barrett and carried.

The following case histories were presented:

(1) Dr. Vance: A woman, married 12 years, gave birth to a child 11 years ago; labor was protracted and her cervix and perineum were lacerated. She has never been well since. She complained of indigestion and gas pains and had been told several times that she was suffering with appendicitis. Dr. Vance saw her first May 8th; she was a frail, thin woman, but in fairly good condition with temperature 99. She had some tenderness over the appendiceal region, her uterus was retroflexed, she was tender over the right tube and ovary. Her white count was 8,600, plymphs 68 per cent; her pulse was 150. On account of her rapid pulse, Dr. Vance hesitated to operate, but sent the patient to the hospital. Three days later he operated on her. She went on the table with pulse 140. Dr. Vance thought it best not to do the perineal operation so opened the abdomen. Free serum was found. Her appendix and terminal ileum, right tube and ovary were bound together with adhesions, her uterus was fairly moveable and there was no particular difficulty encountered in the operation. An ovarian abscess containing about one drachm of semi-purulent material ruptured on removal. The right tube and ovary were removed, drainage was provided for. That evening her temperature arose to 102. Next morning it was 105.5. She was complaining of much pain and during the day her temperature was 106 at 2 o'clock. Dr. Turner at this time made a blood culture which later proved to be negative. Five cc. of 1 per cent mercurochrome was administered, temperature dropped 1.5 degrees, but soon came back to 105 degrees per axilla. Patient died at 10 p. m., 36 hours after her operation. Her pulse stayed up around 150. Dr. Vance stated that he thought this a case of acute toxemia. The case was then discussed by different members of the staff and it was suggested that this might be a case of toxic goitre and that if a basal metabolism had been done the nature of her condition might have been revealed.

(2) Dr. Ramey: Mrs. F. C. B. Never been pregnant She was operated on two times in Nebraska. Her father did of heart disease, her mother died of cholecystitis. Her present complain is profuse menstruation and dysmenorrhea. Examination revealed a fibroid about the size of an orange. Urine was negative. A hysterectomy was performed. On section a large polypus was found in the fundus of the uterus. Patient made an uneventful recovery. Diagnosis was interstitial fibroid with polypus. The case was of interest in that the cause of the bleeding was supposed to be her fibroid when in reality it was her polypus.

The following members of the staff were present; Drs. Stevenson, Barrett, Turner, Vance, Ramey, Rogers, Miller, Rawlings, Garrett and Cummins.

E. J. Cummins, Sec'y Medical Staff.

CHAVES COUNTY MEDICAL SOCIETY

After the Summer recess began meetings again on September 1st. This society has always been regarded as the banner society of the state but unless the members show more interest this season than last it will lose its position.

Only four members were present at the last meeting. Too many outside attractions. One or the other must be abandoned if we are to have an active, working society. C. M. Yater, Secy.

Open All the Year
with
Pluto Spring Flowing All the Time

French Lick Springs Hotel Co.

French Lick, Indiana

No Hospital

No Sanitorium

SIX HUNDRED AND FIFTY ROOMS
(ALL OUTSIDE) IN OUR HOTEL

A place where your patients can find attractive surroundings with adequate medical service and supervision.

Dunning S. Wilson, M. D., Ky. U. of L., '99, is in charge of the Medical Department, which is equipped with complete X-ray, actinic ray, chemical and bacteriological laboratories for diagnostic and therapeutic work.

When your patients are tired of home or hospital send them to French Lick for final recuperation.

Write for Booklet

The Victor Two-Section Mobile High Frequency Apparatus

A Diathermy Machine of Major Calibre for Both Office Use and Treatment at the Bedside

Truly mobile. The apparatus proper (upper section) may be removed from the cabinet (lower section) and conveniently placed in the auto to facilitate treatment in the patient's home. In pneumonia cases especially is this feature appreciated

The physician who does only a moderate amount of reading of medical literature is aware of the present wide and rapidly increasing use of diathermy in medical practice.

For many years the Victor organization has studied this trend, during which one of the outstanding problems was to design an apparatus which would be of major calibre and at the same time so compact as to permit its being conveniently moved about, even to the patient's home when necessary.

Whatever may have been your past experience with high frequency apparatus of the portable type—most of which have served only as mere introductions to the full possibilities of this form of therapy—bear in mind that the Victor Two-Section Mobile High Frequency Apparatus stands out as an engineering achievement that is destined to prove diathermy an important daily factor in the physician's armamentarium.

The machine is held down to compact size without sacrifice in the quality of currents delivered. In short, this Victor machine is not a toy—rather it incorporates the honest intent of its designers to place in the physician's hands an outfit of major calibre with which he may confidently anticipate the best therapeutic results.

If you would know of the far-reaching possibilities of high frequency therapy in your practice, write our Biophysical Research Publications Bureau for interesting and instructive literature

VICTOR X-RAY CORPORATION 2012 Jackson Blvd., Chicago, Ill.

Sales Offices and Service Stations in All Principal Cities

DALLAS, TEXAS: VICTOR X-RAY CORPORATION OF TEXAS, 2503 COMMERCE ST.

LOS ANGELES, CALIF., 951½ SO. OLIVE ST.

X-RAY
Diagnostic and Deep Therapy Apparatus. Also manufacturers of the Coolidge Tube

VICTOR

PHYSIOTHERAPY
High Frequency, Ultra-Violet, Sinusoidal, Galvanic and Phototherapy Apparatus

Figure It Out Four Yourself

Who will suffer the loss of a malpractce action? Who will pay your judgment?

If you do not carry protection you must employ your own attorneys at a fee that would probably pay the premium on a Medical Protective contract for many years. You will lose time—gain undesirable notoriety—lose money—impair your working efficiency by worry and in the end you may lose and be obliged to pay a judgment—which means a blow to your home, bank account, good name and practice.

Will you continue to expose all that you possess to some disgruntled patient, or will you be prepared for the emergency when it arises by having a Medical Protective Contract?

The cost is small but the satisfaction great

for
Medical Protective Service
Have a
Medical Protective Contract

THE
MEDICAL PROTECTIVE COMPANY
OF
FORT WAYNE, INDIANA

YUMA COUNTY (ARIZ.) MEDICAL SOCIETY

SEPTEMBER MEETING

The Yuma County Medical Society held their first fall meeting on Sept. 2nd, at the hospital. Three new members requested admission to the society, namely: Dr. H. A. Reese, by transfer from Cochise county; Dr. J. W. Ives, recently of New Haven, Conn., and Dr. E. B. Bever, the new government physician on the Indian Reservation.

A general discussion regarding plans for the improvement of the present hospital was held. On account of the bonded indebtedness of the county being at its limit, it will not be possible to raise funds to build a new hospital. However, there are funds available for a new building for surgery and delivery room and a new home for the nurses. An architect will be asked to draw up plans for a uniform scheme of enlargements to be carried out during the coming years, so that the hospital can be added to gradually as they are able. The hospital is full to capacity all the time at present.

Discussion of clinical cases was deferred until the next meeting. E. G. Colby, Sec'y.

PERSONAL NOTES

DR. AND MRS. WILLARD SMITH AND DR. AND MRS. HARRY B. GUDGEL, of Phoenix, have returned home after two and a half months spent in exploring the Hawaiian Islands. It is said that the islands survived.

DR. KIMBALL BANNISTER, of Phoenix, has returned from his summer vacation on the coast, and resumed his practice.

DR. HARRY R. CARSON, of Phoenix, left the middle of September for St. Louis where he will take a postgraduate course under Dr. Wm. McKim Mariott, at Washington University, in pediatrics, returning to Phoenix about November 1st.

What Is It?

Does Not Become Cold When Applied to Tissue?

—portable, light, complete, compact and noiseless.

—no rheostats, connects to any outlet.

—solid silver knives, no oxidation, simple heat.

—no frequent burning out.

—heated continuously for one hour if desired.

—IT can be depended upon.

(pause three minutes)

POST CAUTERY

Let's tell you about it

Pacific Surgical Mfg. Co.

320 W. Sixth St. Los Angeles

DRS. JOHN WIX THOMAS AND W. WARNER WATKINS, of Phoenix returned September 8th from an automobile tour of the northwest.

DR. ORVILLE H. BROWN, of Phoenix, returned Sept. 5th from an auto tour into the northwestern states, covering Oregon, Washington, British Columbia and California.

DR. HARRY A. REESE, for many years with the Copper Queen Hospital Department in Bisbee, and more recently in private practice in that city, has moved to Yuma, Arizona.

DR. WM. O. SWEEK, of Phoenix, has been spending some weeks in Portland, Ore., and vicinity, partly on vacation and partly in special work at the medical school hospital there.

DR. HARLAN P. MILLS, of Phoenix, left Sept. 10th for California, the special object of the trip being to place his two sons in school. The two boys will enter the junior class of Pomona College, having had two years in the Junior College of Phoenix.

DR. JOHN W. IVES, formerly of Milford, Conn., a graduate of Yale University in 1900, has located in Yuma, Arizona.

DR. WILLIS P. BAKER, formerly with the Army Medical School, in Washington, D. C., is now located at Fort Huachuca, and has recently affiliated with the Cochise County Medical Society.

DR. J. T. McDONALD, medical director of the Veterans' Bureau in Phoenix suffered a painful accident the latter part of August. While on a professional trip to Young in Paradise Valley, an automobile accident resulted in a fractured femur. Dr. McDonald is receiving visitors in the Sisters' Hospital in Phoenix, while he patiently waits for the fracture to unite.

DR. WALTER F. DUTTON, of Amarilla, Tex. was a recent visitor in Phoenix, stopping to see his brother-in-law, Dr. Geo. M. Brockway. Dr. Dutton's name is well known in the field of internal medicine, particularly in connection with the advocacy of intravenous therapy, having published a book on this subject. Dr. Dutton is temporarily located in Amarilla, convalescing from a sinus infection. He holds the position of Director of Hospitals for the University of Pennsylvania Medical School.

DR. F. H. CRAIL, Superintendent of the State Hospital for the Insane at Las Vegas, was a visitor in Roswell early in September.

DR. J. M. WINCHESTER, of Clayton, attended the state golf meet in Roswell early in September.

DR. W. G. SCHULTZ, formerly with the Thomas-Davis Clinic of Tucson, has moved his offices to 26 South Stone Avenue. His practice, as heretofore, will be limited to Urology, Genito-urinary Surgery and Dermatology.

BOOK REVIEW

1924 COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, Rochester, Minnesota. Octavo of 1331 pages, 254 illustrations. Philadelphia and London. W. B. Saunders Company, 1925. Cloth $13.00 net.

The 1924 papers from the Mayo Clinic are combined in one volume, an improvement over previous years. The arrangement and selection of the material shows the usual good taste of the editor.

The wide variety of subjects discussed, precludes a review, in the small space alloted us. More space is devoted to medical, than to surgical consideration. The valuable statistics quoted, can probably not be duplicated in any other clinic in the world. The same applies to the enormous amount of clinical material. The volume requires study, rather than mere reading. It is a valuable addition to any medical library.—B. F. S.

For Nursing Mothers

Before advising a mother to put her baby on the bottle, many successful physicians investigate the mother's diet.

Often where other foods fail, DENNOS the milk modifier, improves the mother's breast milk both as to quantity and quality.

DENNOS aids digestion, prevents formation of heavy curds, and contains the vital elements of wheat.

Samples and literature sent on request

DENNOS *The milk modifier*

The DENNOS FOOD CO., Portland, Oregon

A3

Neocinchophen ABBOTT

Used in place of the SALICYLATES

An increasing number of physicians are prescribing **NEOCINCHOPHEN,** Abbott, in

Acute Rheumatism	Arthritis
Lumbago	Sciatica
Neuritis	Gout
Neuralgias	Migraine

Dysmenorrhea, etc.

This drug is better tolerated by the average patient than the salicylates. **NEOCINCHOPHEN** does not upset the stomach nor irritate the kidneys.

Always specify **NEOCINCHOPHEN,** Abbott, the first to be made by this name in the United States under license from the Chemical Foundation, Inc.

Your druggist has it for your prescriptions
Literature on request

THE ABBOTT LABORATORIES
4753 Ravenswood Avenue, Chicago
31 E. 17th St., New York 284 Central Bldg., Seattle 559 Mission St. San Francisco 420 S. San Pedro St., Los Angeles
Toronto Bombay

AMERICAN ILLUSTRATED DICTIONARY. Edited by W. A. Newman Dorland. A new and complete dictionary of terms used in medicine, surgery, dentistry, pharmacy, chemistry, vetrinary, science, nursing, biology and kindred branches; with the pronunciation, deriveation and definition. Thirteenth edition, revised and enlarged Octavo of 1344 pages with 338 illustrations, 141 in colors. Contains over 2500 new words. Philadelphia and London. W. B. Saunders Co., 1925. Flexible binding. Price $7.00, with thumb indext $7.50.

The Dorland Dictionary has for years been the best work of its sort obtainable and the new thirteenth edition maintains the old standard. A comparison with the tenth edition of 1920 shows an increase in size of one hundred and forty three pages, a considerable addition to a dictionary of this sort within a period of five years. The derivation of words shown throughout is a most important mnemonic aid. The familiar flexible binding, the paper, print and handy thumb index leave nothing to be desired.—E. A. D.

SURGICAL PATHOLOGY. By William Boyd, M. D., M. R. C. P. Ed., F. R. S. C., Professor of Pathology, University of Manitoba; Pathologist to the Winnepeg General Hospital, Winnepeg, Canada. Octavo of 837 pages with 349 illustrations and 13 colored plates. Philadelphia and London: W. B. Saunders Company, 1925. Cloth $10.00 net.

The trained surgeon must have at his instant command the subjects of anatomy and pathology. The former may be obtained by didactic methods, but the latter is chiefly acquired in the school of experience where the clinical features are best expressed. The inexperienced operator halts with indecision because he does not recognize the pathology of the tissues involved, thus adding to the dangers his patient must overcome.

There has been no work that claimed the distinction of discussing in particular pathology as seen by the surgeon, until this volume by Boyd came from the press. From bacteriology to clinical features the interest of the surgeon is kept uppermost. Even directions for collection of pathological specimens are not overlooked, though important subjects receive by far the greater attention. It is an excellent effort at systematizing and correlating this portion of the surgeon's field, and putting the information together in a readable way. It corresponds favorably with works on surgical anatomy.

The book is a step in the right direction. Surgery needs it. Textbook information detailed in an interesting manner is the proper adjunct to actual experience. Here those who diligently search for knowledge can find assistance. Surgical Pathology is a worthy addition to the surgeon's library. E. B. R.

THE TREATMENT OF SYPHILIS

A working monogram on the treatment of syphilis has been prepared for the medical profession by the Dermatological Research Laboratories which will be sent with the compliments of the publishers to any physician requesting a copy. This booklet discusses the following in separate chapters:

Introducton, Syphilis Today, Arsphenamine vs. Neoarsphenamine, Sulpharsphenamine, Bismuth in Syphilis, Mixed Treatment.

Methods of Treatment: The Primary Stage, The Secondary Stage, The Tertiary Stage, Neurosphilis.

Intraspinal Injection. Technic of Preparing: Arsphenamine, Neoarsphenamine, Sulpharsphenamine, Bismuth. Possible Reaction, Sodium Thiosulphate, References.

Requests for this monograph should be addressed to The Abbott Laboratories, Chicago, or the Dermatological Research Laboratories, Philadelphia.

Announcing the Fourth Annual

Physiotherapeutic Convention

ARRANGEMENTS have been perfected for a really elaborate Physiotherapeutic Convention to be held at the

DRAKE HOTEL

Chicago

October 12 - 16

1925

There will be lectures, clinics and demonstrations, all in charge of well-known physicians and surgeons. For purposes of demonstration, carefully prepared papier-mache or wax figures and models will be used, and in some instances live models will be employed for this purpose.

List of Speakers

Miles J. Breuer, M. D. Lincoln, Neb.
W. B. Chapman, M. D. Carthage, Mo.
M. H. Cottle, M. D. Chicago, Ill.
Elkin P. Cumberbatch, M. D. London, England
Leo C. Donnelly, M. D. Detroit, Mich.
Emile C. Duval, M. D. Chicago, Ill.
Raymond F. Elmer, M. D. Chicago, Ill.
J. C. Elsom, M. D. Madison, Wis.
F. H. Ewerhardt, M. D. St. Louis, Mo.
George W. Funck, M. D. Chicago, Ill.
J. U. Giesy, M. D. Salt Lake City, Utah
Dean W. Harman, M. D. Ames, Iowa
E. C. Henry, M. D. Omaha, Neb.
A. R. Hollender, M. D. Chicago, Ill.
Wm. E. Howell, M. D. Chicago, Ill.
Arthur E. Joslyn, M. D. Lynn, Mass.
D. Frank Knotts, M. D. Chicago, Ill.

The Convention will be subdivided into the following sections:

Eye, Ear, Nose and Throat.
Gynecology and Urology.
Orthopedics and Surgery.
Dermatology, including Malignancies.
Neurology.
Internal Medicine and Pediatrics.
Industrial Physiotherapy.
Miscellaneous Practice.

Special rooms will be provided on the mezzanine floor for smaller groups attending clinics and round table discussions, and for demonstrations to follow up interesting talks delivered from the platform. There will also be clinics at Chicago hospitals.

Admission will be by card only. A. M. A. rules will apply throughout; either an A.M.A. fellowship card or its equivalent will insure admission. Arrangements for accommodations, etc., will be attended to on request by the Education Department of H. G. Fischer & Co., Inc.

A record attendance is anticipated. There were over seven hundred physicians and surgeons present at last year's Convention, and this year's record will be much higher. Those interested are advised to make plans now and

List of Speakers

Disraeli W. Kobak, M. D. Chicago, Ill.
Gustav Kolischer, M. D. Chicago, Ill.
William A. Lurie, M. D. New Orleans, La.
G. Betton Massey, M. D. Philadelphia, Pa.
Frederick H. Morse, M. D. Boston, Mass.
Roswell T. Pettit, M. D. Ottawa, Ill.
T. Howard Plank, M. D. Chicago, Ill.
Curran Pope, M. D. Louisville, Ky.
Israel L. Sherry, M. D. Chicago, Ill.
Chas. E. Stewart, M. D. Battle Creek, Mich.
Harry M. Thometz, M. D. Chicago, Ill.
Albert F. Tyler, M. D. Omaha, Neb.
Frank H. Walke, M. D. Shreveport, La.
Clarence M. Westerman, M. D. St. Louis, Mo.
A. L. Yocom, Jr., M. D. Chariton, Iowa

— — — — — — — — — — — — MAIL THIS COUPON — — — — — — — — — — — —

H. G. FISCHER & CO., Inc.
2333-43 Wabansia Avenue, Chicago, Illinois.

Gentlemen: Please send me the complete Program with reservation card for the FOURTH ANNUAL PHYSIOTHERAPEUTIC CONVENTION which I shall endeavor to attend.

Name .....

Street .....City and State.....

THE Original

AVOID Imitations

FOR INFANTS, GROWING CHILDREN

FOR NURSING MOTHERS

"Horlick's" is readily adapted to individual infant feeding, nourishes and strengthens delicate children, and is used with benefit as a nourishing food-drink for nursing mothers. Prescribed by the medical profession over one-third of a century.

Samples and literature prepaid upon request.

Horlick's Malted Milk Co.
RACINE, WIS.

GRADUATE SCHOOL *of* MEDICINE
(Medical Department)
The Tulane University of Louisiana

Class A-1 school, reorganized to meet all requirements of the Council on Medical Education of the A. M. A. Splendid clinics, wonderful opportunities for both advanced studies leading to a degree as well as short review courses for busy practitioners. Added to this is a mild climate in a most interesting old city. Thirty-ninth session begins November 2, 1925. For further information address,

Dean,
Graduate School of Medicine
1551 Canal Street New Orleans

THE NEW PHARMACOPEIA

The United States Pharmacopeial Convention met in Washington in May, 1920, and appointed a committee to revise the Pharmacopeia of the United States. The new Pharmacopeia was placed on sale August 15. it becomes official January 1, 1926. The responsibility for the scope of the new Pharmacopeia was placed on the twenty-one members who held the degree of Doctor of Medicine. Consequently, the new book should more nearly represent rational medicine than some of the proceding revisions in which pharmacists and pharmaceutic manufacturers largely controlled the situation. From the stand point of the physician, the most noteworthy feature of this revision is the fact that but forty new drugs and preparations were added, while 192 have been deleted. The additions are drugs which give promise of therapeutic worth: thirty-one of them are already described in New and Nonofficial Remedies. The omission of such substances as arnica, calcium hypophosphite, cerium oxalate, coriander, grindelia, hops, lactucarium, three lithium salts, matricaria, prickly ash, musk, parsley, pepper, saw palmetta, stillingia, sumbul and taraxicum is a distinct aid to scientific medicine. An effort has been made to simplify the Latin titles: examples are: the substitution of Cinchophenum for Acidum Phenylcinchoninicum; Methenamina for Hexamethylenamina; Liquor Pituitarrii for Liquor Hypophysis. Whereas the present Pharmacopeia requires that two drugs and preparations be standardized biologically, the new book requires that eight must be so standardized. The unit of measurement, the milliliter (abbreviation "Mil'), which is used in the present Pharmacopeia has happily been abandoned again and the familiar cubic centimeter (abbreviated "cc.") restored. (Jour. A. M. A., Aug. 29, 1925, p. 678)

INTER-STATE POSTGRADUATE ASSEMBLY OF AMERICA

The annual congress of this organization will be held in St. Paul, Minn., October 12th to 16th, inclusive. Hotel headquarters will be the St. Paul Hotel. This meeting will present diagnostic clinics in all departments of medicine and surgery by leaders in ther respective fields from all over the country. Spaca does not permit the printing of the detailed program which is quite comprehensive.

Any members of the medical profession of the southwest who find it convenient to attend this meeting will find that the exhibits, clinics and scientific program will repay them.

MERCURY RUBS

It has been pretty clearly demonstrated that the mercury that is rubbed into the skin is absorbed from the sebaceous glands and hair follicles, and to some extent from the sweat glands. What is left on the skin after the rubbing is over is of no service, and cleanlinss suggests that it be thoroughly washed off with benzine or other solvent.

What the physicians, convinced of the practicability of mercurial medication by way of the skin, is particularly interested in is an ointment that can be used with some degree of scientific exactness, and one that does not advertise the patient's misfortune to his acquaintances. Parke, Davis & Co. are offering little cakes or blocks of cacao butter containing metallic mercury, which they call Mercurettes, and which the patient can conveniently carry with him, on occasion subdividing them into halves or quarters for use. Each Mercurette contains 50 grains of mercury, uniformly distributed throughout the mass. See advertisement in this issue.

Tempting the Convalescents' appetite

THE appetite of the convalescent patient is a "finicky" thing, it tires so easily of the foods that the patient needs to build him up.

Knox Sparkling Gelatine combines with the necessary foods—milk, eggs, vegetables, fruit juices and broths—and makes an almost endless variety of delightfully dainty dishes.

And recent laboratory tests have shown that gelatine preparations, because of their ease of digestion and their real food value, actually improve the general physical condition of the patient.

To safeguard against impurity and disturbing acidity, it is essential to specify Knox Sparkling Gelatine, the Highest Quality for Health.

A number of special recipes for convalescents have been prepared by a recognized authority and will be sent free to doctors and hospitals upon request. Address the Knox Gelatine Laboratories, 438 Knox Avenue, Johnstown, N. Y.

AMERICAN BOARD OF OTOLARYNGOLOGY

The next examination given by the American Board of Otolarnygology will be held at the Cook County Hospital, Chicago on October 19th, 1925. Application should be made to the secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

SCARLET FEVER. During the past year there have been greater definite advances in our knowledge of the etiology and treatment of scarlet fever than in any of the other communicable diseases. Scarlet fever streptococcus antitoxin unquestionably marks the greatest advance in preventive medicine in the last decade. This new product is destined to prove as important and valuable a factor in scarlet fever as is diphtheria antitoxin in diphtheria.

The hemolytic streptococcus has been definitely established as the causative agent, as it has been suspected of being, for many years.

The infection is transmitted through air borne droplets of saliva, or by contact with objects soiled with saliva or nasal secretions, or through contaminated milk; it is not transmitted through the skin or desquamated scales.

The Dick test seems to be reliable for detecting those persons who are suspectible to scarlet fever, but is complicated by the fact that one negative reaction does not always indicate immunity. The Dick test comes within twenty-four hours and fades as quickly, different somewhat from the Schick test.

The matter of immunization with toxin has not been worked out in all details, the best dose for this purpose not having been established, nor has it been established how long immunity lasts.

The new scarlet fever streptococcus antitoxin which has just been licensed by the United States Government bids fair to make the year 1925 memorable in the history of medicine. It will rob scarlet fever of its terrors for its therapeutic results are nothing short of marvellous. The dosage varies with the severity of the attack, and the serum may be given intramuscularly or intravenously, and the effects are striking. The rash begins to fade in six hours and the temperature drops; in twelve hours it may be normal; there is a drop in the leucocyte count and pulse rate and rapid subsidence of the angina. Children sit up and play the next day. In 93 cases recently reviewed by Blake, 92 were cured and one who was treated late in the disease died.

The Present Status of the Control of Scarlet Fever. Ralph Oakley Clock, M. D., Pearl River, N. Y. Med. Jour. & Record, Aug. 5, 1925, p. 158.

SCARLATINAL ANTITOXIN. This is the second report of this author on the use of Dochez's serum intravenously.

This report covers 42 patients, 32 of whom rereceived the serum intravenously and 10 intramuscularly.

The dose of the scarlatinal antitoxin should depend on the age or size of the patient, the severity of the infection, the method of administration, and the content of the antitoxin in the serum. His conclusions are:

(1) Unconcentrated antitoxin is safer for intravenous administration. (2) Concentrated antitoxin is safer for intramuscular administration. (3) The earlier the antitoxin is administered, the dose being adequate, the less the incidence of complications. (4) Intravenous administration causes the earliest fall of temperature. (5) The quantity of

Worth Writing for and Trying

FOR INFANTILE DIARRHEA

50 BULGARA TABLETS

and Literature

Hynson, Westcott & Dunning

BALTIMORE, MARYLAND

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome-220 Soluble

Dibrom-oxymercuri-fluorescein

2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

HYNSON, WESTCOTT & DUNNING

Baltimore, Maryland

serum given does not seem to affect the incidence of chill or the development of serum rash.

Further Observations on the Administration of Dochez's Scarlatinal Antitoxin, C. L. Thenebe, M. D., Hartford, Conn. Boston Med. & Surg. Jour., Sept. 10, 1925, p. 497.

THE SELECTION OF A PHYSICIAN

The selection of a physician for an operation or as a family doctor, is usually made with some care. We consult those who have employed physicians and are governed largely by their recommendations. But having selected a physician, we follow his advice. We trust him even to the extent of submitting to operations that may have serious results.

The point is, we trust THE MAN WHO KNOWS.

Now, doctor, the institutions and the firms advertised in this Journal were carefully investigated before their announcements were printed here. The medicinal products were submitted to laboratory tests before they were accepted by the Council on Chemistry.

On the same principle that patients trust you about matters with which you are informed, so your publishers urge you to trust their judgment and buy goods from the advertisers who are admitted to these pages. Other considerations being equal, you should give your advertisers PREFERENCE because you know they are believed to be trustworthy. Don't speculate or experiment! Trust the APPROVED firms and goods!

A Grin's No Sin

WE'LL TAKE LAUGHING GAS

(From the Kalamazoo (Mich.) Gazette)

Miss Maxine Davis will give private dancing lessons, ballroom and anaesthetic, at her home.

WHY THE GREAT RUSH?

(From the New York Herald Tribune)

Mr. and Mrs. ————, whose summer home is at Roslyn, are being congratulated on the birth of a daughter. . . . Their wedding will take place in August.

THEN THE PROOFREADER LEFT TOWN

Miss Lucille Rife as flower girl carried a basket of roses and sweet peas. Mr. Robert Jones of Altoona wore a frock of pink georgette and acted as best man.—Lancaster (Pa.) Intelligencer.

THOSE FAMOUS HOLLOW LEGS

Shaw was shot in the leg after an automobile chase through the downtown district, by the offficers who suspected it cointained liquor. No whisky was found, however.—Atlanta Journal.

"Gimme a tablet."
"What kinda tablet?"
"A yellow one."
"But wat's the matter with you?"
"I want to write a letter."—Ex.

ANOTHER TRIUMPH FOR SURGERY

Richard, son of Rev. D. K. Laudenslager, had his tonsils removed in the Riverview Hospital, Norristown, yesterday. His leg is improving and he uses a cane instead of crutches.—Schwenkville (Pa.) Item.

REMARKABLE RECORD

Rodolfo Gaona, Mexico City's pet bull-fighter, has bade farewell to the arena after fighting bulls for twenty years without being killed once.—Louisville Courier-Journal.

THE RICH NEBRASKA SOIL

Even the canary that has been raised from the canary seed by its mistress often expresses warm affection for its mistress.—Lincoln (Neb.) State Journal.

MOONLIGHT A LA CARTE

Doan Trail Riding Academy—day or night ride in the moonlight.—Muskegon (Mich.) Chronicle.

Mother was busy, cleaning a chicken for the family dinner.

Little Dorothy watched the process with keen interest, especially when the insides were being taken out of the fowl.

"Mother," asked the child, finally, "just what are you looking for in there."—Clipt.

Lady: "Where is my seat?
Usher: "Your seat is on the end of U, madam."
Lady: "Sir!" Clpt.

SITUATIONS WANTED

WANTED—Salaried appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

OFFICE FORMS
for the PHYSICIAN

Professional Statements
Prescription Blanks
Ledger Sheets
We Know Your Needs

Embossed Professional Stationery
lends dignity to your correspondence

A. C. TAYLOR PRINTING COMPANY

publishers of
SOUTHWESTERN MEDICINE

121 E. Jefferson St. Phoenix, Arizona

FOR THE INUNCTION TREATMENT
OF SYPHILIS

MERCURETTES

CLEANLY ~ EFFECTIVE ~ CONVENIENT

MERCURETTES will appeal to your patients. They are made of cacao butter in oblong blocks delicately and pleasantly perfumed and their use is not betrayed by the odor and messiness suggesting blue ointment.

Each block or briquette contains 50 grains of metallic mercury very finely subdivided and thoroughly distributed throughout the cacao butter base. It is wrapped in wax tissue and tinfoil.

Any required dose for a mercurial rub can be easily and accurately obtained without soiling the fingers, by cutting the block through the wrappers into the desired number of parts.

Mercurettes are supplied in boxes of 6 blocks and in bulk in packages of 50 and 100 blocks. Your druggist has Mercurettes in stock.

Literature on Mercurettes will be gladly sent to physicians on request.

PARKE, DAVIS & COMPANY
DETROIT ~ MICHIGAN

INFANT DIET MEAD'S MATERIALS

INFANT DIET MATERIALS

These valuable Infant Diet Materials are offered for your consideration and approval:

MEAD'S DEXTRI-MALTOSE

Used in the modification of regular milk mixtures

MEAD'S CASEC

Used in the feeding of infants with fermentative diarrhea

MEAD'S COD LIVER OIL

A tested Antirachitic Agent

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.
Manufacturers of Infant Diet Materials

MEAD JOHNSON & COMPANY,
Evansville, Indiana

Gentlemen: —

Send me the following literature and samples checked:

- ☐ Mead's Dextri-Maltose
- ☐ Mead's Casec
- ☐ Mead's Cod Liver Oil

Name.....

Address.....

Rabies Vaccine *Lederle*

(SEMPLE METHOD)

14 doses of 2 c.c. each comprise
the entire treatment.

Semple conducted extensive experiments in India in which he used killed, phenolized rabies virus to immunize rabbits, dogs, monkeys and human subjects. His researches have proved that such a vaccine can be relied upon to produce a high degree of immunity and that it is a safe and efficient rabies vaccine.

USES: Rabies Vaccine—*Lederle*—(Semple Method) is used as a preventive treatment of rabies during the incubation period. *After symptoms of the disease are fully developed, treatment is of absolutely no value, for there is no known cure for rabies.* In a person who is taking the treatment, there is a contest of speed between the passage of virus from the wound to the brain by way of the nerves, and the development of immunity by the action of the vaccine. *It requires two weeks after the completion of the treatment for the full development of immunity.*

Dosage: *All doses are alike.* Each syringe contains one dose (2c.c.). *The amount and strength of the virus is the same in each of the 14 doses. One dose is given daily* for fourteen days. It is not necessary for the intervals between doses to be exactly 24 hours, for the time of day for the injections can be arranged to suit the convenience of the patient and the physician. *Children are treated with the same dosage as adults.*

Prompt service is assured as we stock the complete treatment in syringes ready for immediate use.

PATHOLOGICAL LABORATORY

PHOENIX, ARIZONA.